An Address
ON
THE TREATMENT OF ABDOMINAL EMERGENCIES.

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BY J. RUTHERFORD MORISON, M.B., F.R.C.S. EDIN.,
SURGEON TO THE NEWCASTLE-ON-TYNE ROYAL INFIRMARY.

MR. PRESIDENT AND GENTLEMEN,—When your secretary, Dr. R. E. Howell, honoured me with an invitation to address you on some subject of practical interest it seemed to me that I could not do better than to offer for your consideration some of the thoughts and information inspired by my experience of abdominal emergencies.

Nothing shows more clearly the completeness of the surgical revolution, initiated by Lord Lister, than a recognition of the fact that 25 years ago we were afraid to open the abdomen lest septic infection resulted, while at the present time the most necessary and useful of abdominal operations have as their chief object its prevention. The time has come, however, when we should cease to wonder at the "marvellous advances of abdominal surgery" and begin to expend our energies on considering how future progress is to be brought about. I do not doubt that this is to be sought for in the prompt treatment of abdominal emergencies; that the most important advances depend upon your care and skill; that they are not to be expected from the ingenuity and daring of mere operators, but from more prompt diagnosis and more vigorous action on the part of the general practitioner. My aim to-night is to enforce with all the energy I can the fact that in the treatment of abdominal emergencies the prevention of septic infection of the peritoneum easily occupies a first place.

Experience in the post-mortem room and operating theatre has taught me that in at least 90 per cent. of patients dead in consequence of abdominal emergencies death has been brought about by septic infection of the peritoneum, and in the great majority of cases of general peritonitis I have found that the more elaborate and thorough the operation undertaken for its treatment the more quickly the patient dies. The following brief notes are from examples of the most tragic and appalling abdominal emergencies.

CASE 1.—A young woman, aged 26 years, employed in a shop, had tea at five o'clock one afternoon. An hour later she shut up shop and started to walk home. When not more than 100 yards from the door she was seized with such sudden severe pain that she had to support herself against the wall and was helped back. When a medical man saw her an hour later she was in a condition of collapse and complaining of agonising abdominal pain. She had never had any rest since. Three days later, when I saw her, she was obviously dying from general peritonitis and I obtained a history of previous stomach troubles of three years' duration. No operation was performed. Post-mortem examination showed a perforating ulcer on the anterior wall of the stomach and general peritonitis.

CASE 2.—A robust man, aged 30 years, was awakened at three o'clock in the morning with a "grumbling" pain in his abdomen. He fell asleep again and got up to go out at 5.30, feeling uncomfortable inside. He worked all day in discomfort. Just before leaving work a sudden severe pain seized him and doubled him up. He vomited and broke into a cold sweat and had to be taken home in a cab. A medical man saw him at once and found him collapsed, in great pain, and vomiting frequently. Repeated hypodermic doses of morphia relieved his pain but he had not slept four days later when I saw him. He was then moribund. Post-mortem examination showed a gangrenous perforated vermiform appendix and general peritonitis.

CASE 3.—A healthy woman, aged 35 years, was sitting quietly at tea with her family when she suddenly jumped up, pressed her hands on her abdomen, called out, "Oh, my God, what a pain," and fell on the floor unconscious. A quarter of an hour later she was seen by a medical man who found her to be unconscious and in a condition of profound collapse. With energetic stimulation and treatment she had recovered consciousness next day and her pulse could be felt. Three days later, when I saw her, the abdomen was much distended and tense, there were signs of free fluid in it, and though her general condition was bad it had improved. Operation showed an enormous quantity of blood in the peritoneal cavity and a ruptured pregnant Fallopian tube. The small intestines were enormously distended; all efforts to get the bowels to act by medicines and enemata failed and the patient died three days after the operation. Post-mortem examination showed only enormously distended anæmic intestines.

CASE 4.—An athletic young man after supper in the house of a friend was reaching upwards for a book when he was suddenly seized with agonising abdominal pain. He was so ill that he had at once to be carried to bed and a medical man found him in a condition of collapse. He gave a definite history of indigestion causing pain one hour after food, but otherwise he had been exceptionally healthy. A week later, when I saw him, he was fully under the influence of opium, but had never slept for more than a few minutes at a time and he was dying. Post-mortem examination showed a perforating duodenal ulcer and general peritonitis.

In each case related the medical man in attendance formed a definite opinion at first sight that some abdominal catastrophe had occurred and that recovery was most unlikely. These may be designated the desperate cases.

The first proposition I have to offer for your discussion is, that the most acute and serious abdominal injuries and diseases give rise to such characteristic symptoms and signs that a probable diagnosis can be made. The diagnosis need not, however, be profound. It amounts to this. Some grave abdominal lesion has occurred. It is most unlikely that the patient will recover unless something can be done to prevent peritonitis or to arrest a possible internal hæmorrhage, and the probabilities are that the patient, if left alone, will die before the end of the fifth day.

What should be the immediate treatment in cases such as I have described above? The answer first concerns the use of opium. Such agony as the patient suffers demands relief and you cannot and will not refuse to give it. Experience has taught us that not only relief but real temporary good, by the diminution of shock, follows the use of morphia. So much immediate good is effected by the dose that the main objection raised against it by surgeons is that the improvement in the patient is apt to lead to the serious error of a failure to recognise the gravity of the condition. The possibility of such a failure constitutes a real danger if no opinion has been formed before the administration of the morphia.

The first duty of the practitioner on seeing an abdominal emergency case is to arrive at a definite conclusion as to whether it is one of these calamitous cases or not. This will not take long to decide if a person previously in fair health is suddenly reduced by agonising abdominal pain to a condition of serious collapse. When this has been settled, but not till then, one-third of a grain of morphia should be injected hypodermically. The next step is to arrange for an operation without a moment of unnecessary delay and I hold very strongly the view that the patient should be conveyed, with every care of course, to a hospital, public or private, if the best chance of recovery is to be given. The grave symptoms have all been relieved or abolished by the dose of morphia; nevertheless, with the courage of conviction derived from previous knowledge immediate operation must be insisted upon. And what are the chances offered by early operation in such cases as those mentioned? The answer is that the mortality-rate could be very considerably reduced. Can I offer you any statistics of my operations for abdominal emergencies in support of this statement? Honestly, I cannot, and if I could I dare not; sufficient early cases are not available and the results of operations upon patients with general peritonitis are too horrible for publication. But if time allowed I could relate many cases which support my contention. Here two must suffice. They were both young women and both were healthy except for stomach troubles. Both had gastric ulcers which perforated and each had the good fortune to have as their medical attendant Dr. Robert Campbell. He made at once a diagnosis of ruptured gastric ulcer in each and I believe I am correct in saying that he never left either until he saw them into the infirmary and was assured by having seen it commenced that an operation was to be done. In both I

performed a similar operation, first making an incision in the epigastrium to verify the diagnosis, and finding gas and stomach contents in the peritoneal cavity I extended the incision from the ensiform cartilage to close above the pubes. I then turned out and thoroughly washed with hot saline solution (one teaspoonful of salt to one pint of water) the intestines and whole peritoneal cavity, taking special care to clean every pocket and in each repaired a large perforation through a stomach ulcer by sutures. In both the abdomen was closed entirely without drainage. This comprises my whole experience of perforating gastric ulcer operated on within 12 hours of the perforation and the two patients made straightforward recoveries.

Before leaving these cases let me ask to whom are the patients indebted for their recovery. All I can say is that a few hours of delay to try the effects of morphiA and hot poultices would have given the operator discredit instead of appreciation. Is it too bold to prophesy that a mortality-rate of at least 90 per cent. will be reduced by early operation to one of not more than 10 per cent.

Unfortunately, the treatment of an abdominal emergency, too often from delay, resolves itself into the treatment of septic infection of the peritoneum, and a few minutes spent in giving you shortly my views on this important subject may not be wasted. The peritoneum is credited with a susceptibility above the average to suffer from septic infections. I feel confidence in stating that the reverse is the fact and that with the exception, perhaps, of the puerperal uterus it possesses a resistance greater than other portions of the human body. In previous papers[1] I have advanced evidence in favour of this and other contentions, but time does not to-night allow of more than what may appear to those who have not read my papers to be too dogmatic statements. It is now recognised that septic infection of the peritoneum may cause death by acute poisoning before time has been given for the manifestations of peritoneal reaction which we call peritonitis. For this condition we can as yet do nothing; the peritoneum and the patient are overwhelmed by a virulent poison. Fortunately the more common result of the introduction of septic contents into the abdominal cavity is that the peritoneum reacts and peritonitis results. This may be limited and local or diffuse and general, according to the virulence or amount of the infective agent, or the power of resistance in the patient's tissues, or the position of the lesion in the abdominal cavity. It is only with the treatment of general septic peritonitis that we are at present concerned and of this alone that I intend to treat.

Many pathologists and surgeons hold that every patient with general septic peritonitis dies and that recovery means a mistake in diagnosis. The majority of surgeons believe that the only chance of recovery is offered by operation. I do not agree with either view, for I have, in one of the papers previously mentioned,[2] offered the strongest evidence against each and could, if time permitted, add still more. There can be no doubt, for I have abundant evidence of it, that patients recover whose peritoneum in every nook and corner has been covered with purulent fluid or purulent lymph, the result of infection from a ruptured gastric ulcer or perforated appendix or similar gross septic source, and it is mere quibbling to call this anything but general peritonitis. It has been my experience that a fair percentage of patients with general peritonitis who have lived over the fourth day can recover, and I would like to draw your attention to the clinical fact that no case is hopeless in which the abdomen though distended is not tense. A patient with tense and much distended abdomen I have never, so far as my recollection goes, seen to recover. At the end of a few more days such immunity has been acquired that in the third week of an illness due to appendicitis I have opened a peritoneum charged with pus and fæces and the patient has got well.

Surgical treatment does not always, I believe, offer the best chance in the treatment of acute general peritonitis, and this I take to be the guide as to surgical or medical treatment. Operation when once the abdomen has become distended is too late. If operation is decided against the first step indicated is to stop the administration of all food and drink by the mouth and to give the required nutriment and fluids by enema. The next is to wash out the stomach with abundance of hot water as frequently as vomiting is troublesome. The most efficacious method of doing this is through the stomach-tube and patients usually obtain such relief from its use that they raise no objection to a repetition of it. As a substitute a pint of hot water or a pint of champagne may be offered as a drink. The third necessity is to keep the patient perfectly quiet and for this purpose small and repeated doses of morphia are administered hypodermically. A linseed meal poultice large enough to cover the whole abdomen should be applied for an hour and repeated every eight hours, abundance of heated cotton-wool being substituted in the intervals between the poultices. Heat is the greatest promoter of cell activity and it is largely on this that reliance is placed in the natural "cure" of peritonitis—hence the recommendation. Last, but not least, a good nurse is essential to the best management of these dangerous cases.

Fortunately the majority of abdominal emergencies are not so tragic as those just described and the next most severe may be described as grave cases. They also commence suddenly with severe pain and vomiting, but shock is moderate in degree. Under this heading may be included small perforations of the stomach, perforations of the intestines and vermiform appendix, acute intestinal obstruction, ovarian cysts with twisted pedicle, and some acute gall-stone cases. The treatment of the most serious of these cases is the same as that of the first class—viz., immediate operation.

Of the less serious it is similar to that of the next class, which I designate serious cases. This class is the most important because the most ordinary. The patient has severe abdominal pain and may be seriously ill but there is no evidence of immediate danger. The general aspect and the pulse are good and the skin is warm. In these cases the keenest effort should be made to form as accurate a differential diagnosis as is possible. What could be more uncalled for than to open an abdomen for intestinal obstruction due to a femoral hernia? The best that can be said of such a proceeding is that it is not so disastrous as leaving things alone. "Examine the hernial sites" should be the first demand made by the practitioner on himself in every abdominal case attended by vomiting. I have emphasised this repeatedly in published papers but neglect of it still causes the loss of many lives. It is in other instances equally important to the patient that the surgeon should operate with a knowledge of which part of the abdomen to enter in order to gain direct access to the seat of the lesion. I must here remark that I have no sympathy with those who say that abdominal diagnosis is so difficult that it can only be made by exploratory means. This is not true. A correct diagnosis is possible in the majority of cases if due care be taken in listening to the history of the illness, in noting the physical signs, and in a careful balancing of the problems suggested by both. The greatest importance is naturally attached to physical signs, but to ignore the history, as has been advised, is sure to lead to the gravest, because avoidable, errors in diagnosis. A tumour is present in the right side of the abdomen and the temperature is raised. Is it a large suppurating gall-bladder due to a stone blocking the cystic duct or a large suppurating kidney due to stone in the ureter? Is it most important in the patient's interest to discover, not always an easy task, whether the colon lies behind or in front of this tumour or to learn that previous attacks have been followed by jaundice or by hæmaturia? Is the history of a previous hernia or of an attack of appendicitis or of tuberculous peritonitis of less value than the physical signs in determining the cause of a large number of cases of intestinal obstruction? In the female does not the history of the existence of a previously harmless tumour with sudden peritonitis, without other signs, make the diagnosis of ovarian tumour with twisted pedicle probable? And does not the history of a menstrual period missed for a week or more and followed by acute abdominal illness in a healthy woman previously never irregular suggest more clearly than any sign or combination of signs that her condition is the result of ectopic gestation? The second proposition I have to make for your discussion is this: That in all except the most acute abdominal emergencies it is possible to make a differential diagnosis sufficiently accurate to suggest the most suitable treatment.

No one in this room, I presume, doubts that the proper treatment of strangulated hernia or suppurating gall-bladder or kidney, acute intestinal obstruction, or acute appendicitis, or ovarian tumour with twisted pedicle, or ectopic gestation, is operation at the earliest convenient hour. It is when doubts arise in the diagnosis that difficulties in the treatment follow. The question must be of this nature to make the treatment other than surgical. Is the patient seriously ill or is the illness due to some trivial or temporary upset

[1] Edinburgh Medical Journal, July, 1873; Northumberland and Durham Medical Journal; THE LANCET, Feb. 23rd, 1901, p. 533.
[2] THE LANCET, Feb. 23rd, 1901, p. 533.

in a hyperæsthetic individual, and is it practically certain that the condition of the patient or the nature of the disease is such that surgical treatment has more danger than the disease itself? The most difficult cases to give a decision upon are those of suspected intestinal obstruction. The pain at first may not be bad enough to raise alarm and its paroxysmal character and accompanying wind-rumblings may be placed to the credit of dyspepsia, or colic, or constipation, or some other more trifling trouble. During their stay in my wards several patients have developed symptoms of acute obstruction due to bands and adhesions and I will mention in detail the treatment which we have adopted for them. If the pain has been severe and paroxysmal and has been attended by vomiting and wind-rumblings and visible or palpable peristaltic movements of the intestine making the diagnosis definite, immediate operation has been the rule. If the diagnosis has been less certain one-quarter of a grain of morphia injected hypodermically has been ordered. If the symptoms are removed by this and do not reappear after eight hours the condition is probably due to nothing serious, but whether or not, a dose of castor oil and an enema are given to clear up the remaining difficulty. If the case is one of intestinal obstruction acute symptoms of obstruction are produced and operation is undertaken at once. The results of this treatment will carry greater weight than anything I can say.

In the absence of both of our surgical registrars I am indebted to Mr. J. W. Heslop for examining the hospital records from 1900 up to date. He has found a note of 11 patients who were attacked by acute intestinal obstruction whilst under my care and suffering from other conditions. Of these, nine recovered and two died. One death occurred in a patient who was not operated upon from mistaken diagnosis. Of 10 patients operated upon nine recovered and one died. The patient who died was a young man whose appendix had been removed two days previously and who developed a complicated volvulus, involving the small intestines.

It cannot be held of these cases that they were easy from the surgical point of view. Every one required more serious manipulation than the reduction of a recent intussusception, or the release of bowel strangulated by a band, or the reduction of a kinked or twisted loop of intestine necessitates. To prove this I need only read notes of the last case of the sort that I operated upon, to be quite fair prefacing it by the statement that the patient was an unusually robust young woman.

CASE 5.—The patient, a female, aged 35 years, was operated upon first on June 10th, 1902. She was then very ill, with an acute abdominal illness diagnosed as abscess in the pelvis and in connexion with the vermiform appendix. Her abdomen was opened over the right iliac fossa by an incision extending from the loin behind. Some clear fluid escaped on opening the peritoneum. The colon and the cæcum were adherent to the parietal peritoneum on the outer side and on gently separating them fœtid pus escaped. The appendix was found lying on the outer side of the cæcum and colon with its tip pointing upwards to the hepatic pouch and was excised. The pelvic brim was filled with matted adherent intestine. The abdominal wound was covered up and the patient was placed in the lithotomy posture, the pelvic abscess, from which a large amount—about one pint—of fœtid pus was evacuated, being opened and drained through an incision in each lateral vaginal fornix by drainage-tubes sewed in. The vermiform appendix contained a stercolith and was perforated at its centre. There was a free discharge of pus, especially from the vagina, for some days, but the patient made a good recovery and was about to leave when, on the night of July 14th, one month after the operation described, she was suddenly seized with symptoms of acute obstruction and became very ill. The second operation was performed a few hours later. The abdomen was opened in the middle line. The small intestines were congested and beginning to distend, the distended loop leading to the pelvis where the obstruction was located. It was due to adhesions, many of which were easily separated, but those in the depths of the pelvis became more dense. In separating a loop there a small abscess was opened and pus escaped. The traction on the inflamed and adherent loop resulted in tearing the intestine almost completely across. Six inches of torn and damaged intestine were excised and an end-to-end approximation was made by catgut sutures. The abscess in the pelvis was thoroughly mopped and the whole pelvis was washed out with saline solution. The abdomen was entirely closed. The patient recovered and is now in first-rate health with firm scars[1]

These results have not depended on any special operative skill of mine, for some have come under the care of my assistants and their cases have done as well as my own. As additional proof of this I may state that my results from operations for acute intestinal obstruction involving the small intestine, performed on the third or fourth day when the small intestines are distended, have been so bad that I could count the recoveries on my fingers. There is only one explanation of these surprising results, and I want to drive the lesson this experience has given me as strongly home as I can, and it is that if patients with acute intestinal obstruction are to have the best chance they must submit to operation without delay. As further bearing on this point I may mention the results obtained at the infirmary in intussusception and strangulated hernia. From the commencement of 1900 12 cases of acute intussusception have been admitted to the surgical wards of the Royal Infirmary for operation. In four of the cases the gut was found to be gangrenous and all of the patients died. Of the eight cases in which the gut was not gangrenous six patients recovered and two died. One of the deaths was caused by a second intussusception which was not discovered till the post-mortem examination. The second death occurred in an acute case of 24 hours' duration in a child five months old. The records of strangulated hernia are even more instructive, for ten years ago the operation for the relief of strangulation was as skilfully performed as it is now, and the superadded danger of a radical cure was less frequently incurred, but from the infirmary reports I find that of 11 patients suffering from strangulated inguinal hernia five recovered, four died, and two remained under treatment in 1891, whilst in 1901, of 22 patients 18 recovered, three died, and one remained under treatment. The cause of death in two of the last mortal cases I know was gangrene of the gut owing to delayed operation, and in one case this was due to the obstinate refusal of the patient to submit to early operation.

Every practitioner of experience has seen recovery ensue in the most formidable-looking cases of obstruction under the ordinary routine treatment by opium, enemata, &c., but it must be remembered that in acute cases the mortality without operation is not less than 80 per cent., and I believe that when the small intestines have been allowed time to undergo considerable distension the best chance for the patient is not often given by operation. In this class the most common forms of appendicitis and gall-stone cases may be placed. They resemble each other in many ways but chiefly in the uncertainty of prognosis. The most serious-looking cases may get well without operation and the less serious, to all appearance, end somewhat suddenly in disaster. Hence the endless discussions as to when to operate upon cases of appendicitis and cases of gall-stone. Examples of both occur in which immediate operation offers the only probability of recovery, but fortunately such desperate cases are rare. Never a month passes, however, but I see a fine young man or young woman dying from general peritonitis due to appendicitis after an illness of four or five days' duration, and it is difficult then to think patiently of the advocates of an indiscriminate medical treatment of appendicitis, knowing that with practical certainty an operation performed on the second day would have saved this life. My view is that every acute case should be operated upon without unnecessary delay if after a single dose of morphia, and at the end of eight hours, every symptom and sign of danger have not disappeared. The risks of removing the acutely inflamed appendix have been exaggerated. I do it in every early acute case I see, and expect the patient to recover unless a diffuse peritonitis, already present, has secured too strong a hold to be remedied by the removal of its cause. The presence of a definite tender tumour following an acute attack, as I have elsewhere pointed out, denotes with certainty the formation of an abscess in connexion with the vermiform appendix and the only satisfactory treatment for this is to remove the appendix and to drain the abscess. By earlier operation a serious illness, a difficult operation, and a prolonged convalescence would have been avoided, so that I have come to regard abscess as evidence of an opportunity lost. In many of these cases of abscess the patients get well if left alone, the pus usually finding its way into an adjoining adherent coil of intestine; but operation is safer (in our last 100 hospital cases there was no death) as rupture of the abscess into the peritoneal cavity is not impossible. Operations on cases of gall-stone during the past 18 months have more

than ever impressed upon me the need for more frequent and earlier operations, and this because I have had the misfortune to lose a considerable number of patients after operation from conditions due to prolonged delay. Some cases of gall-stone come under the heading of desperate conditions, more than can be known, unless operations are performed or post-mortem examinations are obtained. As an example of this I offer the notes of my most recent case of this sort

CASE 6.—The patient was an exceptionally healthy robust man, aged 50 years. Until his fatal illness he had never been ill a day in his life. His only complaint was of temporary attacks of severe "stomach cramp" to which he had been subject for years. He had never been jaundiced. On Sunday night he had a sudden severe attack of pain. On Monday his distended gall-bladder was felt. On Tuesday he had signs of peritonitis round the gall-bladder and a cough. On Wednesday there were symptoms and signs of pneumonia. On Thursday very acute abdominal pain and signs of spreading peritonitis were present. On Friday the abdominal conditions were worse. Operation showed diffuse purulent peritonitis in the upper half of the abdomen and a gangrenous perforated gall-bladder with three gall-stones in it, one of which was firmly impacted in the cystic duct. Death occurred on Saturday. A post-mortem examination showed double pneumonia. The peritoneal cavity was clean.

You will note that the diagnosis in this case was based upon a history of "spasms," a tender, swollen gall-bladder, a high temperature, and that there was no jaundice. Unless a stone has got into one of the liver ducts, jaundice, of course, is not a symptom and this is apt to be forgotten and so mistakes arise. A confident diagnosis of a stone, or stones, impacted in the neck of the gall-bladder or in the cystic duct, with cholecystitis, can be made in similar cases. The safest and most satisfactory treatment of them is by early operation, though it must be remembered that spontaneous recovery by rupture of the gall-bladder into the peritoneal cavity with absorption of the fluid contents of the gall-bladder and encystment of the stones by adhesions, or by rupture into a hollow viscus to which it has become adherent, or by rupture externally, may occur. If time permitted I could relate cases demonstrating each of these methods. If gall-stone surgery is to show better results in the future than in the past patients must be operated upon whilst the stones are still confined to the gall-bladder, from which they can be removed by a simple and safe operation.

The accompanying list made for me by Mr. G. Grey Turner, surgical registrar of the Royal Infirmary, is a complete record of our fatal cases of gall-stone for the past 18 months.

1.—A male, aged 50 years. Condition: very ill; high temperature. Gall-stone in the cystic duct; gangrene and rupture of the gall-bladder; septic peritonitis. Operation: laparotomy; cholecystotomy. Result: death. Remarks: died 16 hours after operation. Necropsy: gall-bladder showed patches of gangrene with a perforation; no further stones; septic peritonitis in the upper abdomen, principally on right side; broncho-pneumonia of both lungs.

2.—A male, aged 50 years. Condition: very ill; high temperature; slight jaundice. Stone impacted in the cystic duct. Gangrene of gall-bladder; localised peritonitis. Operation: laparotomy; cholecystotomy. Remarks: died six hours after operation. Necropsy limited to operation area. No other stones found. Liver very fatty.

3.—A female, aged 54 years. Condition: very ill; high temperature; slight jaundice. Stones in gall-bladder. No pus found. Patient too ill to explore ducts. Operation: cholecystotomy. Remarks: died seven days later after a few hours' illness with high temperature and jaundice. Necropsy showed a sloughing gall-bladder. One stone found impacted in lower end of common duct and projecting into duodenum. Many stones higher in duct. Two stones in hepatic ducts. Septic cholangitis. Other stones in small hepatic ducts and one free in a liver abscess.

4.—A female, aged 38 years. Condition: very ill; high temperature. Removed stones from gall-bladder and liver substances. Multiple abscesses in liver round stones. Operation: laparotomy; cholecystotomy. Remarks: recovered sufficiently to leave hospital with sinus. Died at home three months after operation.

5.—A male, aged 62 years. Condition: deep jaundice. Fistula over gall-bladder the result of old suppuration. Stone felt at bottom of sinus. Operation: stones removed by enlarging sinus in abdominal wall. Remarks: died ten months after operation. Cause could not be ascertained. No necropsy.

6.—A female, aged 33 years. Condition: slight jaundice; high temperature. Large stone removed from pus cavity behind common duct. Gall-bladder small and contracted. No stones in gall-bladder or ducts. Operation: laparotomy. Remarks: died ten days after operation. Post-mortem examination; no further stones found. Stricture of pylorus. Nothing surgical found. Death accounted for by syncope.

7.—A female, aged 67 years. Condition: intense jaundice; very ill; high temperature. Large number of stones removed from gall-bladder; one from cystic duct; none from common duct. Operation: cholecystotomy. Remarks: died 16 days after operation after an acute abdominal attack. Necropsy showed small stone impacted in duodenal orifice of common duct. Bacillus coli communis from fluid of ducts. Liver bile-logged. Heart fatty.

8.—A male, aged 55 years. Condition: very ill. Stones removed from gall-bladder and cystic duct. Operation: cholecystotomy. Remarks: died ten days later. Necropsy showed an abscess around the appendix with suppurative pylephlebitis. Operated on by mistake on the supposition that the illness was due to gall-stones. Bile-ducts healthy. No stones left.

9. A female, aged 23 years. Condition: very ill; high temperature. Removal of stones from gall-bladder, latter inflamed; omentum contained ten drachms of pus and was excised along with gall-bladder. Operation: Cholecystectomy. Remarks: died seven days later, quite suddenly, when convalescent. At necropsy nothing surgical found to explain death; no further stones; syncope.

10.—A female, aged 54 years. Condition: good, except for chronic bronchitis and asthma. Stones removed from gall-bladder; there had been an old perforation. Muco-pus in gall-bladder. Operation: cholecystotomy. Remarks: died six days later from acute double lobar pneumonia. No other stones found. Abdomen and wound healthy.

11.—A female, aged 22 years. Condition: good. Pus in gall-bladder from which stones were removed. Operation: cholecystotomy. Remarks: died 24 hours after operation from broncho-pneumonia. No other stones found at necropsy. Wound and abdomen healthy.

12.—A male, aged 60 years. Condition: good. Stones removed from gall-bladder. Operation: cholecystotomy. Remarks: died three days after operation. Acute pneumonia of right base. No further stones found at necropsy. Wound and abdomen healthy.

You may ask, Are there no disadvantages to be advanced as reasons against such surgical activity as I have suggested? Of course there are, and the dangers and difficulties must be fairly admitted. I am not one of the optimists who hold that after opening the abdomen, if it is found that nothing serviceable has been accomplished, "no harm has been done." It is poor consolation to offer for this view that the patient recovered. The recovery must be recognised as having occurred in spite of, and not in consequence of, surgical interference, and the cause of the error must be fully studied as a guide to the avoidance of similar mistakes in the future. Some mistakes are unavoidable, and it is for such that the old saying, "He who makes no mistakes makes nothing," must be offered as an excuse. Intestinal obstruction due to general firm matting of the intestines, usually the result of healed tuberculosis, acute hæmorrhagic pancreatitis, acute malignant peritonitis, and other incurable conditions, may be offered as examples of my meaning, for by our present means of diagnosis they cannot be excluded.

I will conclude by mentioning two more common causes of error which have been forcibly impressed upon me by personal experience of them. Some three years ago I opened the abdomen of a young woman sent into the infirmary as a case of ruptured gastric ulcer a few hours after the onset of sudden agonising pain in the upper abdomen, attended by collapse, preceded by a history of stomach trouble and followed by rigidity and tenderness of the abdominal wall. Nothing was found to account for the attack, but next day the signs of pneumonia at the left base were present and the disease ran its usual course, the patient recovering. Since then I have more than once escaped a similar disappointment by remembering that the pain attending chest inflammations may be referred to the abdomen and produce symptoms closely simulating those of acute peritonitis. This fact should have been sufficiently impressed upon me previously, for my brother, Mr. A. E. Morison of Hartlepool, in a paper on Empyema published in the *Northumberland and Durham Medical Journal*, had pointed out how the abdominal pain and rigidity of muscles and vomiting accompanying empyema might simulate abdominal disease and lead to error, and Dr. David Drummond has taught for years that chest inflammations in their early stages can be readily mistaken for peritonitis.

In THE LANCET of August 2nd, 1902, p. 280, Mr. H. L. Barnard of the London Hospital published an excellent paper recording in detail several cases of pneumonia mistaken for abdominal disease and treated by abdominal section, so that the possibility of forgetting this in the future may be lessened by this reminder.

The second cause of error has, so far as I am aware, not previously been noted. The subject is, however, so important that I hope shortly to have a series of cases fully recorded and must ask you, in the limited time at my disposal, to accept a bald statement of the facts.

A patient usually at or past middle age is suddenly seized with all the symptoms of an acute abdominal illness, so definite that a diagnosis of ruptured gastric ulcer, intestinal obstruction, strangulated hernia, or some such lesion, followed by peritonitis, is the diagnosis made. The abdomen is more or less rigid and more or less distended, and operation if it be undertaken reveals no abdominal lesion. Post-mortem examination in typical cases shows only an increase of fibrous tissue in the kidneys, which are granular on their surface and adherent to their capsule. In at least six of such cases I have seen the abdomen opened—by myself or by

my colleagues—in the belief that the condition was due to some surgical calamity, and guided by past experience in several cases recently the true state of affairs has been realised by Mr. G. G. Turner and Mr. Heslop who are associated with me in the infirmary, and myself in time to avert an operation on cases sent in for this purpose. The curious grey, apathetic look of the patient, with urine of low specific gravity and sometimes containing blood and albumin, has suggested to us to exclude the form of kidney mentioned before making a definite diagnosis of abdominal disease.

The last conclusion that I have to offer for your discussion is the proposition with which I introduced my paper; that future advances in abdominal surgery depend more on the general practitioner than on anyone else and that *the* treatment of abdominal emergencies is early operation.

FURTHER INVESTIGATIONS REGARDING THE INFECTIVE NATURE AND ETIOLOGY OF PERNICIOUS ANÆMIA.

(25 CASES.)

(SYN.: "IDIOPATHIC ANÆMIA OF ADDISON.")

ITS NON-IDENTITY WITH THE "PROGRESSIVE PERNICIOUS ANÆMIA" OF BIERMER.[1]

BY WILLIAM HUNTER, M.D. EDIN., F.R.C.P. LOND.,

PHYSICIAN TO THE LONDON FEVER HOSPITAL; EXAMINER IN MEDICINE IN THE UNIVERSITY OF GLASGOW.

I.—INTRODUCTORY.

AMONG the conclusions arrived at in the investigations recently recorded[2] there is one on the subjects raised by the title of this paper which has not merely a special but a more general interest alike for physicians and for pathologists.

As is well known, the severe condition of anæmia above referred to was first made known to English physicians by Dr. Addison in 1855 in a masterly account. He gave it the title of "idiopathic anæmia" and under that name it excited the attentive interest not only of the best English physicians but also of some of the best Continental observers. A distinguished reviewer has recently testified[3] from his own experience as far back as 1860 to the interest taken at that time in the disease by Trousseau in Paris.

In 1871 a condition which in many of its features seemed the same as that already known to us as idiopathic anæmia was described by Professor Biermer of Zürich under the name "progressive pernicious anæmia." This account was hailed in German literature as that of a new disease, and under that name or that of "Biermer's anæmia" it is commonly spoken and written about by German observers up to the present time, although it was clearly established by Dr. P. H. Pye-Smith (1875 and 1883), one of Addison's own pupils, that the disease had been known to English observers for more than 15 years. This fact was fully admitted by Professor Eichhorst, the author of the most important German monograph on the disease: "We come to the result that this [the "primary," "idiopathic," "essential," "protopathic," "cryptogenetic"] form of pernicious anæmia was first described in England, both in the form of single cases and as a definite clinical disease."[4] This just recognition came, however, too late (1878). With the stamp upon it of "a new disease" the new title of "progressive pernicious anæmia" rapidly made its home in English literature—the term "idiopathic" being either given a generic significance as including both chlorosis and pernicious anæmia,[5] or being reserved for only one form of "progressive pernicious anæmia," that termed by German workers the "primary" form.

For the last 20 years, as already stated, it is under the name of "progressive pernicious anæmia" or the shorter title of "pernicious anæmia" that the disease has been known. The title "Addison's anæmia" is only rarely applied to it in English literature although most English observers have Addison's account in their mind when they speak or write of "pernicious anæmia." On the other hand, the title "Biermer's anæmia" is one of the commonest names given to it in German literature, the latest modification of this, suggested as a tribute to Professor Ehrlich's work upon it, being that of "Biermer-Ehrlich anæmia" (1900).

II.—NON-IDENTITY OF ADDISON'S ANÆMIA AND BIERMER'S ANÆMIA.

The general assumption has been that Addison's and Biermer's accounts refer to one and the same condition. In German literature the account given by Addison is regarded as of a subordinate interest—relating merely to one form (so-called "primary") of what they consider should be included under the designation of "progressive pernicious anæmia." This position has been maintained consistently throughout in German literature as one quite unassailable and in many cases in English literature as well. (See Scheme.)

Now, the particular name a disease is known by may be a matter of relatively little importance provided that all are agreed as to the unity of the disease itself. But the matter is otherwise if any question exists from the very outset whether we are really dealing with one and the same disease—whether Addison's conception of "idiopathic anæmia" and Biermer's conception of "progressive pernicious anæmia" really relate to the same diseases, and it becomes one of real importance if it turns out as I propose now to show—that the two conditions are not identical.

1. The anæmia which Addison described is really a remarkable infective disease with definite antecedents, mode of origin, infective and hæmolytic lesions, and clinical course.

2. On the other hand, the investigations which have made this clear have also made clear that the condition described by Biermer is, as its supporters truly maintain, "not a disease *sui generis* but a frequently recurring group of symptoms met with in very different conditions of disease" (1900), "not an etiological unity but only a symptomatic group which can be produced by causes of all kinds" (1900), the most common cause being, as I hope to show, septic infection, this being the feature that has led them to be confounded with Addison's anæmia.

With investigations that have led up to these very definite conclusions I now propose to deal—not in any narrow spirit as if it were simply a question of international priority of observation, but in a broader spirit commensurate with the importance of the clinical and pathological facts involved. As regards the spirit in which I approach the international aspect of the subject I cannot do better than quote the judgment of a recent reviewer: "In his history of the observation and interpretation of pernicious anæmia, from the date of its discovery down to the present time, the author seems to us perhaps to err on the side of generosity to Biermer."[6] To this I can add that from first to last during the progress of my investigations of this disease since 1885 the international aspect of the subject is the one that has interested me least. It was under the name "progressive pernicious anæmia" that I learnt of the disease from my teachers in the University of Edinburgh (1878–83). When I learnt later (1887–88) of the question of priority between Addison and Biermer this seemed to me to be of quite subordinate interest in view of the fact that all observers were equally agreed about the totally mysterious nature of the condition or conditions they severally described.

III.—FUNDAMENTAL DIFFERENCES BETWEEN ADDISON'S AND BIERMER'S CONCEPTIONS OF THE ETIOLOGY.

While in regard to the clinical features and absence of morbid changes described Addison's and Biermer's accounts showed no essential differences, in regard to etiology they displayed the most fundamental differences. Addison described the anæmia he had in view as "occurring without any recognisable cause whatever ..... cases where there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease. Accordingly, in speaking of this form in clinical lectures I, perhaps with little propriety, applied to it the term idiopathic to distinguish it from cases in which there existed more or less evidence of some of the usual causes, or

[1] A paper read before the Cambridge Medical Society on Nov. 9th, 1902.

[2] THE LANCET, Jan. 27th (p. 221) and Feb. 3rd (p. 296) and 10th (p. 371), 1900. "Pernicious Anæmia," 1901.

[3] Brit. Med. Jour., Nov. 16th, 1901.

[4] Eichhorst, 1878, p. 38.

[5] Dr. Coupland, 1881; Dr. J. S. Bristowe, 1886.

[6] Brit. Med. Jour., Nov. 16th, 1901, p. 1474.

concomitants, of the anæmic state." (Addison, 1855.) Biermer, on the other hand, stated of the condition he had in view that "a perfectly spontaneous origin without clear etiology was one of the rarities. ..... It was found amongst *poor* people, especially among women among whom, in addition to poverty, puerperal conditions appear to be favouring causes. Insufficient and unsuitable feeding, unhealthy surroundings, chronic discharges—especially persistent diarrhœa—sometimes also hæmorrhages, usually preceded the disease and caused it. The most common cause according to his observations was chronic diarrhœa, with or without gastric disturbance." (1871.) It is impossible to imagine conceptions more opposed, the one asserting that it not only occurred "without discoverable cause," but that this was the special feature entitling it to separate recognition; the other asserting that "spontaneous origin without clear etiology was the exception." (See Scheme.)

But even the foregoing striking contrast between Addison's and Biermer's conception does not exhaust the differences between them. If anything is brought out more clearly than another in Addison's description it is that he thought he was dealing with an altogether special form of disease—"A very remarkable form of anæmia"; "This very remarkable disease"; "This form of anæmia"—such are the terms which this eminent physician, towards the end of a life exceptionally rich in clinical and pathological experience, writes of the condition he has in his mind. On the other hand, it is not so clear what Biermer had in his mind. The first words of his address were that it was on "a variety (*sic*) of *progressive pernicious anæmia*"—as if the latter were a well-known condition and he was dealing with a particular form of it. This latter impression seemed borne out by his next statement that in five years he had seen 15 cases, implying that this particular "variety" of progressive pernicious anæmia was not common. He then went on to give a description of the clinical and pathological features of his "variety" that is quite applicable to Addison's anæmia; while, as we have seen, he gave an account of its etiology totally inapplicable to "Addison's anæmia," but quite applicable to exceptionally severe conditions of ordinary anæmia. It can, then, with utmost justice be said that Biermer's account and conception of the disease lack the preciseness and definition of terms so marked a feature of Addison's. There is no doubt about what Addison had in his mind; there is a doubt as to what Biermer was thinking about or describing.

But if there is some doubt as to what Biermer's conception really was, there is none whatever as to what all German observers have agreed in regarding as "Biermer's anæmia." Their statements and observations demonstrate conclusively that what they have in view as "Biermer's anæmia"—what they term "progressive pernicious anæmia"—is not "Addison's anæmia" but a whole series of conditions of anæmia of which Addison's anæmia is only one particular form. Thus, compare with Addison's reference to "this very remarkable disease" the following extracts from the chief literature of the subject (1) 1871–88 and (2) 1888–1902.

IV.—INFLUENCE OF BIERMER'S TEACHING ON SUBSEQUENT WORK.

The remarkable degree to which this teaching of Biermer as opposed to the original teaching of Addison influenced the work of observers from 1870–88 I have brought out elsewhere.[7] For a few years, it is true (up to 1876), the attitude of observers towards the disease "progressive pernicious anæmia" was much the same as that of Addison. They thought they were dealing with some special form of anæmia. But from 1876 onwards a sudden and marked change of opinion became evident, the title "progressive pernicious anæmia" underwent a degradation; the anæmia was held to be only an extreme form of anæmia, the possible result of many causes, having no claim to be regarded as an independent disease. A careful study of the literature shows that this change of view was associated with the extensive observations of Professor Quincke (1876–80).

Professor Quincke (1876–80):—

If we summarise the facts recorded (1876) it thus appears that the conditions of the blood and other organs in pernicious anæmia are by no means alike in all cases; that the disease, therefore, most probably arises in very different ways; that we therefore have not to do with any single diseased process, but that pernicious anæmia, like anæmia generally, represents the product of various diseased processes and at the same time the highest form, the most extreme stage, of anæmia. One might, therefore, parallel it in a certain sense with uræmia, jaundice, septicæmia, &c., which also present definite clinical pictures but can spring from most different disease conditions. Two types: In individual cases the features of the disease can vary (according to its mode of origin) by presenting some of the features of the original cause. And in this relation one will have to remember that deficient blood formation (*anhæmatosis*) and increased destruction of blood elements (hæmophthisis) form the two types, which, however, can be combined with one another and in this way give to the clinical features different characters. Examples of the first type would be those cases in which chronic inanition, gastric atrophy, or trophic disturbance of blood-forming organs are present; examples of the second variety *perhaps* those cases with an increase of iron in the liver. On such a view of pernicious anæmia it is clear that the boundary line between it and the more intense forms of simple anæmia cannot be quite a sharp one (1876).

The result of the present further observations (on 11 cases) serves to confirm the view expressed in my former—that pernicious anæmia, like anæmia generally, is the product of very various morbid processes and represents the highest form of anæmia. Etiologically there appears to me to be no ground whatever for separating pernicious anæmia from other forms of anæmia (1877, p. 17).

Pernicious anæmia is essentially a clinical picture, and if one strives to distinguish between primary and secondary forms I do not think it justified to exclude all cases with obvious anatomical lesions as not belonging to the disease. Since we know that the picture of the disease can be presented by cancer of the stomach (Eisenlohr) or cirrhosis of the stomach (Nothnagel) we must regard these among the causes of secondary progressive pernicious anæmia, while those cases which arise through disturbances of blood formation, or disturbance of blood decay, are to be separated off as primary forms of first and second order. In actual cases it will often remain doubtful to which group the case is to be referred (1880, p. 586).

The great majority of observers, following Biermer, considered that all the ordinary causes of anæmia could produce the disease, that a spontaneous origin without clear etiology was the exception. The disease might originate in very various ways and be the product of extremely various morbid processes. The chief factors in its production were (1) insufficient nourishment, (2) unhealthy surroundings, (3) gastro-intestinal disturbances, (4) hæmorrhages, (5) wasting discharges, (6) gastric and intestinal lesions (atrophy and cancer), and (7) intestinal worms; the first being so important that in the opinion of Eichhorst (1878) the disease was never met with in the well-to-do classes. In short, the title *idiopathic* or *pernicious anæmia* is "a sort of provisional shelter for a multitude of cases possibly of various origin";[8] "the final stage of several forms of symptomatic anæmia and of chlorosis."[9]

The degree to which Biermer's teaching has continued to influence the views of chief writers on the subject up to the present time (1902) may be now brought out by the following extracts from the literature of the subject, 1888–1902.

1. Thus Eichhorst (1878 and 1891)[10]:—

The chief merit of Biermer's work—the great and invaluable service he has rendered—is that it brought together into one common group and under one title a number of different forms of anæmia possessing certain characteristic features in common (1878, p. 31). One cannot emphasise too much Biermer's statement, "*A perfectly spontaneous origin without clear etiology is one of the rarities.*" It is therefore clear that from the etiological standpoint there are as many forms of progressive pernicious anæmia to be distinguished as there are causes to be found. It is absolutely necessary that we should hold fast to this statement if we desire to be clear as to the degree and character of the services Biermer has rendered to the subject (1878, p. 31). It is a fact that progressive pernicious anæmia attacks especially poor, overworked people. I have not found a case in the literature where the disease has attacked a person living in good circumstances of life (1878, p. 30). ..... One has to distinguish between primary, essential, idiopathic forms (the smaller group) and secondary deuteropathic and symptomatic forms (the larger group) (1878 and 1891). *We come to the result that the primary form was first described in England both in the form of single cases and as a definite clinical disease* (1878, p. 38). ..... In the latter a feature is the *gross disproportion* between the causes and the effects ..... in short, a *kind of predisposition* is essential to the development of the disease (1891). ..... Secondary progressive pernicious anæmia can be produced by *mental overdrain* and *excessive psychical efforts* alone. In many cases *bad home surroundings, bad air* (in factories), *deficient food* (potatoes, coffee) are the cause. Sometimes the disease develops during *pregnancy*, or after *parturition*, without any special complication having occurred. Sometimes *diarrhœa, vomiting*, repeated *nose-bleeding*, or *discharges* of any kind—e.g., chronic ulcers of the leg—are causes. Also exceptionally it can develop after *enteric fever* and *syphilis* (1891).

2. Professor Grawitz (1896)[11]:—

Progressive pernicious anæmia, essential anæmia, severe primary anæmia. The condition now to be described under the above names was clinically and anatomically first described by Biermer (1871) and thereby introduced into pathology. The fame of having firmly grasped and defined with greatest clearness the whole essential symptom-complex of these diseases, and having made it known to the medical world, belongs to Biermer (p. 85). Professor Birch-Hirschfeld (1892) has in a

[7] Pernicious Anæmia, pp. 19-22.

[8] Immermann, 1878; Stephen Mackenzie, 1878; Quincke, 1876, 1877, and 1880; Byrom Bramwell, 1877; Samuel Fenwick, 1877; Eichhorst, 1878; and Sidney Coupland, 1881.

[9] Henry and Osler, 1886.

[10] The italics here and throughout the extracts given are mine.

[11] Klinische Pathologie des Blutes, 1896.

precise way grouped together all severe anæmic conditions irrespective of their etiological origin ..... whether caused by repeated hæmorrhages, gastric and intestinal disturbances, intestinal parasites, pregnancy and puerperal infectious processes, syphilis, malaria, idiopathic or cryptogenetic infection or auto-intoxication—under the name of pernicious anæmia. According to Birch-Hirschfeld, there is no reason on the grounds of etiology for separating from the above group and entitling as "true" pernicious anæmia those cases in which no cause is discoverable since by this criterion the diagnosis can only first be made post mortem (p. 88).

3. Professor Ehrlich and Dr. Lazarus[12]:—

The famous address by Biermer (1871), in which the name "progressive pernicious anæmia" was first used, forms the starting point for our description of the disease. ..... Under this symptom-complex Biermer thus groups together essential, idiopathic, primary conditions of anæmia with those of known etiology and pronounced secondary character; at least, he specially mentions in some cases an organic disease—follicular ulcers of colon—as the starting point of the disease. All subsequent works dealing with progressive pernicious anæmia, as also those which deny to this particular condition the right to be dealt with in a special chapter of pathology, are based, directly or indirectly, consciously or unconsciously, on Biermer's publication. The *essential changes* which define progressive pernicious anæmia *are blood changes*. Ehrlich has the credit of having in the clearest manner and from the widest point of view pointed out their distinctive significance. According to Ehrlich the blood of typical cases of pernicious anæmia differs from that of simple anæmia in showing, more or less numerously, red corpuscles which exceed the normal in size, whereas in simple anæmia only red corpuscles are met with whose diameter is normal or smaller than usual. The appearance of megalocytes in the blood, as also the appearance of their nucleated precursors the megaloblasts, show that *the regeneration of the blood is no longer following its usual physiological course*—it is following a type never found under normal circumstances in adults, a type resembling that found in embryonic life (p. 91). These distinctions are so important and far-reaching that it becomes necessary to separate the megalocytic and megaloblastic anæmias from the normocytic and normoblastic, even if this division does not correspond clinically with Biermer's division of pernicious anæmia from other forms of anæmia. We come, then, to the result that we are here concerned with the conditions characterised by the features described by Biermer and Ehrlich. But *we must continuously keep in mind that we have not to speak of a disease sui generis*, but a frequently occurring group of symptoms met with in very different conditions of disease (p. 92). ..... In diagnosis the point of greatest importance is to discover megaloblasts in the blood. Their discovery often requires great patience. A positive result—the presence of undoubted megaloblasts in conjunction with an increase of megalocytes—is *proof positive of the existence of pernicious anæmia*; since it demonstrates without doubt that the *blood formation in the bone-marrow is following a type* which is *abnormal for adults* (p. 171).

Under the head of causes and origin of the disease, the factors, 12 in number, considered responsible for the secondary forms of the disease are dealt with at length. "Of these forms, the one which in its etiology, if not also in its pathogenesis is *fully* explained is bothriocephalus anæmia. The bothriocephalus anæmia is progressive pernicious anæmia with a *known* etiology." Yet a few sentences later Dr. Lazarus has to make the important admission regarding this fully known disease—to account for the facts that worms may be present without anæmia and that the severity of the anæmia is by no means proportionate to the number of worms present—"We must accept that in the behaviour or the characters of the parasite there is a *something over and above* which transforms it from a comparatively harmless inhabitant of the intestine into a highly dangerous disease producer" (p. 95). "The bothriocephalus, *under certain conditions not yet fully ascertained*, is able to produce an anæmia which presents a complete picture of the Biermer-Ehrlich anæmia" (p. 99). And then he adds: "*Unfortunately* one must at the present moment admit that our knowledge of bothriocephalus anæmia represents our entire positive knowledge of the etiology of progressive pernicious anæmia" (p. 99). Regarding the possibly infective nature of the disease all these observations (viz., the presence of organisms in the blood; flagellate organisms of Klebs, 1877; leptothrix organisms of Frankenhauser, 1883; Petrone, 1884; Perles, 1893) have had the fate that, after being published by their authors, they have not been confirmed by the authors themselves or by other observers (p. 107).

Then follows this brief reference to Addison's anæmia: "After all these cases have been dealt with we have still to deal with cases of pernicious anæmia in which not a single point can be got out of the history throwing any light on the origin of the disease; in which neither clinical observation nor necropsy reveals any changes in the organs to which the severe disease can be referred—'primary,' 'essential,' 'cryptogenetic,' anæmia" (p. 107). It might be thought that this last-mentioned group was of a single nature. But not even this is conceded. The emphatic conclusion is expressed: "It is not to be doubted that even among these are many forms differing entirely from one another in their origin and pathogenesis."

4. Dr. Schaumann, "Pernicious Anæmia in the Light of a Modern Toxic Hypothesis" (1900)[13]:—

As regards the term "pernicious anæmia," I hold the same views as Immermann, Quincke, Lichtheim, Müller, and the other authors who consider that the disease is not an etiological unity but only a symptomatic group which can be produced by causes of all kinds. I regard, therefore, as pernicious anæmia not only the so-called idiopathic, or primary, or better, cryptogenetic cases where the disease develops without any recognisable cause, and apparently spontaneously, but also those in which a definite etiological cause for the anæmia is to be found. Among such causes are the following: (1) Intestinal parasites; (2) gastro-intestinal disturbances of all kinds; (3) pregnancy and puerperium; (4) repeated hæmorrhages; (5) infective processes (syphilis, malaria, enteric fever); (6) intoxications (carbonic-oxide poisoning). If I have to define my position in a few words—I consider that we must regard as pernicious anæmia those cases of severe anæmia which correspond to the clinical picture described by Biermer and possess the blood condition described by Ehrlich, irrespective whether such cases occur in individuals previously healthy, or in those already affected with disease, and irrespective whether the anæmia runs a fatal course or not (p. 253).

5. Professor Stockman (1895)[14]:—

The evidence seems convincing that pernicious anæmia follows usually on well-recognised debilitating causes. The cause is sometimes obscure and is not detected, but we are rapidly reducing this unknown territory. .....

I hold that anæmia from any cause induces in some persons degenerative changes in the whole vascular system; that these permit the occurrence of numerous minute internal bleedings, more rarely of external ones also; and that a persistent continuance of these leads ultimately to excessive anæmia and death. .....

These bleedings are, to judge from the exacerbations and partial remissions of symptoms, more numerous at one time than another, and according to the amount of blood loss the case progresses rapidly or slowly.

As has been previously pointed out, *the causes of the initial anæmia* are still imperfectly known, and cases sometimes occur in people who are *apparently healthy* and living under good conditions. .....

6. Professor Strumpell (1899)[15]:—"The credit of being the first to study pernicious 'anæmia' as a special disease belongs to Biermer (1868)." And yet the name he gives to the condition is "the essential pernicious anæmia," and the definition he gives of it is—

"Primary ..... without recognisable cause." ..... Anæmia from cancer of stomach, ankylostomum, bothriocephalus latus, atrophy of stomach and of intestinal mucosa—all these have nothing to do with the essential pernicious anæmia. ..... We can in no way admit the existence of a "gastro-intestinal form of pernicious anæmia." ..... The secondary anæmias can be grouped together according to their different causes, not so the primary essential anæmias *which depend upon an injury to blood formation* (1899).

The word "essential" is here used to signify that the anæmia is a primary one, the result of some pathogenic cause acting upon the blood itself, *or upon the hæmo-poietic system*. We must hold fast to this conception of the disease, especially as the attempt has been repeatedly made of late to degrade pernicious anæmia from the rank of an idiopathic disease and regard it as merely a grave form of secondary anæmia which may result from any of the most varied causes (p. 938, German sixth edition, 1890).

(This extract is of interest as being the only one in German literature known to me where Addison's etiological conception of the disease is strictly adhered to. Nevertheless, although this conception is quite opposed to that of Biermer, the whole credit of being the first to describe the disease is given to Biermer, despite the admission of Professor Eichhorst (1878) (see *supra*) that the credit of having described the primary essential form of the disease, both as a definite disease and as individual cases, belonged to English observers.)

7. Dr. Wiltschur (1893):—

Under the influence of this or that condition—most frequently bad food—there develops some affection of the gastro-intestinal canal, and this allows the possibility of the absorption of ptomaines. *The conditions under which these blood-destroying ptomaines develop in the intestine are unknown.* One must conclude that they arise as the *result of altered digestion and absorption*, consequent on disease of the mucosa, or on bad food, or on both combined.

8. Dr. Pepper and Dr. Stengel (1896)[16]:—

We are of opinion that it makes no essential difference what the cause is, since the ensemble of symptoms remains the same. Hence we repeat that we regard pernicious anæmia more as a symptom-complex than as an independent disease—a form of "cachæmia" which may arise from digestive disturbances in stomach and intestine, from intestinal parasites in pregnant or puerperal women, or through other unknown causes (p. 652).

9. Dr. Byrom Bramwell (1899)[17]:—

I am disposed to think in the present state of our knowledge (1) that

[12] Die Anaemie, Part II., 1900.

[13] Volkmann's Sammlung Klinischer Vortrage, No. 287, December, 1900.

[14] Brit. Med. Jour., 1895.

[15] Lehrbuch der speciellen Pathologie und Therapie, twelfth edition, 1899, p. 555.

[16] The Gastro-intestinal Origin of Pernicious Anæmia. Verhandlungen des Congresses für Innere Medicin, Band xiv., 1896, p. 631.

[17] Anæmia and Diseases of the Blood-forming Organs, 1899.

pernicious anæmia should be regarded as a *clinical condition*; in other words, that the term pernicious anæmia should be applied to any profound and (apparently) causeless anæmia which is characterised by the peculiar alterations in the blood described above and in which the anæmia tends to pursue a progressive or pernicious course. 2. That the question whether the clinical condition termed pernicious anæmia may result from a variety of causes, or whether it is a single clinical entity the causation of which is always one and the same should be left an open one.

10. Professor Grawitz (1901)[18]:—

I consider that the absence of the anti-fermentative action on the gastric juice favours the development of intestinal putrefaction; and thus with apepsia gastrica and intestinal glandular atrophy the circumstances are extremely favourable for deficient absorption on the one side and development of intestinal putrefaction on the other. .....

As I have formerly pointed out (1896), *we cannot explain these blood diseases without the existence of an individual predisposition*, to explain why only a certain number of men react to the existing cause by a degeneration of blood corpuscles.

Schaumann (1900) also concludes that a predisposition of this kind is necessary for the occurrence of the severe anæmia associated with bothriocephalus anæmia, since there are a great number of men whose blood is not in the slightest degree affected by the worm, although the worms of these men, as Schaumann and Tallqvist have shown, contain the same toxic bodies as other worms. .....

I leave aside the question whether the view of several authors—e.g., Martius—is right (Achylia Gastrica, Leipsic, 1897) that *defective nourishment alone* without any auto-intoxication is able to cause severe anæmia. I hold this to be thoroughly possible, even if at the same time I consider that the action of toxic bodies in the majority of cases of pernicious anæmia which come under treatment plays the most essential part in their production. .....

The circumstances for most cases are such *that in the first place an injury to the corpuscles occurs through absorption of toxic products*, that in consequence of *the advancing anæmia (sic)*, perhaps also through the *local toxic action*, an atrophy of glands occurs in many cases. As a result of this, with the usual diet a greater or less diminution in the assimilation of food occurs, this in turn increasing the anæmia, so that gradually a *circulus vitiosus* is established, while in other cases the blood degeneration advances without it coming to an atrophy of glands.

These atrophies of glands are not always necessary in order to produce this anæmia.

As the result of these observations I consider the doctrine of the enterogenous origin of *pernicious anæmias (sic)*—as built up on the observations of different authors—to be one of the most practical advances in the domain of practical hæmatology. .....

That there are many points still dark in this difficult subject is certain—notably the *extraordinary persistence and progression of the disease* after, *to all appearance, the cause is removed*. As is known Ehrlich (Verhandlungen des Verein für Innere Medicin, 1899, p. 227) refers this to the anatomical changes in the bone marrow as evidence either of megaloblastic degeneration or failure in regenerative function.

Nevertheless I consider the difference of pernicious anæmias from simple forms of transitory anæmia is due to the malignant direction taken by blood formation.

According to our present knowledge the blood degeneration can in no case be regarded as a really primary disease of the blood. In each case we must regard these blood changes *as a result either of a known condition* (e.g., cancer or malaria, &c.), *or of known or unknown poisons* (e.g., carbonic oxide, perhaps, also lead, poisons of intestinal parasites, poisons of intestinal putrefaction), or *long-standing small hæmorrhages*, or *changes* in the bone marrow. And there ought to be very few cases of pernicious anæmia nowadays in which it is not possible by careful examination into the history and clinical features to find the cause for the remarkable degeneration of the blood.

If one holds fast to this standpoint it appears to me unjustified to group together the most varied disease-conditions simply on account of a prominent blood change. On the contrary, the several groups of pernicious anæmia ought to be separated according to their etiology.

The superstructure thus built upon Biermer's foundation I have represented in the accompanying scheme. According to my observations not one of the many causes above described are capable, however severe, singly or collectively, of producing the hæmolytic changes underlying Addison's anæmia. Consequently not one of them can be regarded as the real cause of that anæmia. The great majority of these so-called "causes" are really symptoms and effects of the infective processes underlying the disease.

V.—VIEWS OF EARLIER OBSERVERS (1855-88) REGARDING THE NATURE OF ADDISON'S ANÆMIA.

The final outcome of Biermer's conception of the disease and its relation to Addison's original conception I have represented diagrammatically in the accompanying scheme (see scheme). I have now to point out that it must not be supposed that this fusion or incorporation of Addison's anæmia into the condition entitled "progressive pernicious anæmia" was agreed to by all observers. English physicians, well acquainted with the clinical acumen and pathological knowledge which characterised all the work of Addison—especially those who were his own pupils—e.g., Wilks and Pye-Smith—were loth from the first on *a priori* grounds alone to admit that Addison could have made such a gross mistake as to regard as "remarkable," "without discoverable cause," something that was in no way remarkable but could be caused by all sorts of conditions. And this feeling was shared by not a few of the best continental physicians both in Germany and in France—e.g., Lebert (1858), who entitled the disease "essential anæmia," and Trousseau (1860). Dr. Pye-Smith was the first to give free expression to this feeling, at first in 1875 in Virchow's *Archiv* and later in an admirably full critical and historical account of the disease in 1883; and the claim he then established on behalf of Addison was, as we have seen, fully admitted by Eichhorst (1878) (see *supra* No. 1). Unfortunately, the foundations (pathological) underlying both Addison's anæmia and Biermer's progressive pernicious anæmia had at that time (1883) been so little laid bare—despite much work on the part of many observers—that it was quite impossible for anyone to determine whether they were the same for both conceptions. The chief and by far the most important foundation was supposed to be, by most observers,[19] *defective blood formation*, as evidenced by the poor blood, the mis-shapen corpuscles, the changes in the bone marrow described by Pepper and Cohnheim, and the presence of nucleated red corpuscles in the blood to which special importance was attached by Ehrlich. Quincke's observation of the presence of pigment in certain organs (liver, pancreas, kidney), (1876) appeared to touch upon another possible foundation—namely, some excessive waste of blood, "hæmophthisis" as he termed it. But on the one hand, up till 1888 the very existence of this particular factor was doubted by observers—still more its importance. "It has no pathogenetic significance whatever and depends probably on the free administration of iron as a medicine" (Müller, 1877). "In all of these there is the suspicion that the increase is an artificial one due to the overloading of the liver with iron preparations" (Eichhorst, 1878); "the condition of the liver noted by Quincke is probably connected with the administration of the drug medicinally" (Mackenzie, 1878, and Coupland, 1881), "perhaps due to local extravasations" (Mackenzie).

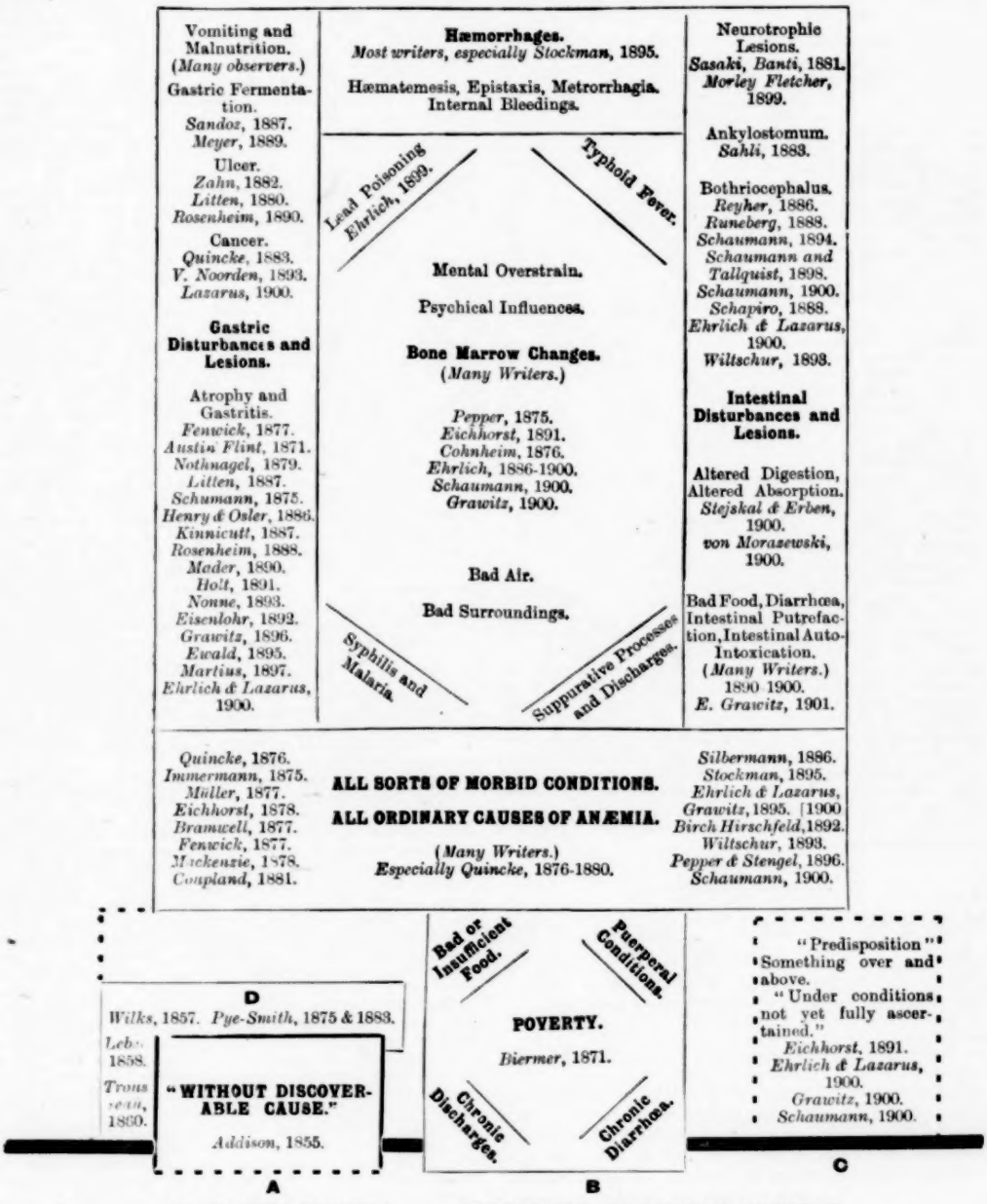
Moreover, Quincke himself both originally (1876) and subsequently (1883) as the results of further observations made by himself and Peters did not attach any distinctive importance to this pigment. He distinguished two types of the disease—one due to defective blood formation, the other due to excessive blood waste. As he expressly stated in concluding his observations (1883) on this point, "they are of importance in relation to pernicious anæmia only in so far as the presence or absence of pigment in any case may enable us to distinguish whether the anæmia *in this particular case* has arisen from a 'hæmophthisis' or from a poverty of material for blood formation." He regarded the hæmophthisis as largely secondary to the defective blood formation underlying the disease. He saw "no ground whatever" for separating this anæmia from other forms of anæmia. Moreover, Quincke was one of the chief founders and exponents of the teaching that all kinds of disease conditions were capable of producing the disease. It is not surprising, therefore, that Dr. Pye-Smith, writing in 1883, in the face of such dubious opinions and observations, preferred to adhere most strongly to Addison's conception of the disease as he did in the final definition: "Addison's anæmia is idiopathic, primary, essential, *without any symptoms during life, and without any lesions after death, which cannot be explained as directly due to the anæmia*. ... .. With regard to the pathology such cases show with equal constancy fatty degeneration of the heart, numerous but small internal hæmorrhages and slight passive exudations, but *no lesion which cannot be ascribed to the primary anæmia*. The true note of the malady is not its severity, not even its fatality, but its being *primary* (not the result of hæmorrhage or of organic disease) and *simple* (not part of a general disease). With regard to the name of the disease the choice lies betwixt the original 'idiopathic anæmia' given by Addison, 'essential anæmia' used by Lebert and many French writers, and 'progressive pernicious anæmia' given by Biermer. Since the first was the name first given there is no reason to use any other until we replace it by the result of greatly increased knowledge."

If by the first portion of his definition, which I have italicised, he, so to speak, placed a barrier round Addison's anæmia, rendering difficult any future access to it (since the discovery of any special lesion or symptom *not* due to the anæmia would *ipso facto* exclude the case from being

[18] Berliner Klinische Wochenschrift, 1901.

[19] See Dr. Byrom Bramwell, op. cit., 1899; Eichhorst, 1891; Ehrlich and Lazarus, 1900.

SCHEMATIC REPRESENTATION OF THE ETIOLOGY OF "PROGRESSIVE PERNICIOUS ANÆMIA" (BIERMER) AND ITS RELATION TO "IDIOPATHIC ANÆMIA" (ADDISON).


Vomiting and Malnutrition. (Many observers.)
Gastric Fermentation. Sandoz, 1887. Meyer, 1889.
Ulcer. Zahn, 1882. Litten, 1880. Rosenheim, 1890.
Cancer. Quincke, 1883. V. Noorden, 1893. Lazarus, 1900.
Gastric Disturbances and Lesions.
Atrophy and Gastritis. Fenwick, 1877. Austin Flint, 1871. Nothnagel, 1879. Litten, 1887. Schumann, 1875. Henry & Osler, 1886. Kinnicutt, 1887. Rosenheim, 1888. Meder, 1890. Holt, 1891. Nonne, 1893. Eisenlohr, 1892. Grawitz, 1896. Ewald, 1895. Martius, 1897. Ehrlich & Lazarus, 1900.
Hæmorrhages. Most writers, especially Stockman, 1895.
Hæmatemesis, Epistaxis, Metrorrhagia. Internal Bleedings.
Lead Poisoning Ehrlich, 1899.
Typhoid Fever.
Mental Overstrain.
Psychical Influences.
Bone Marrow Changes. (Many Writers.)
Pepper, 1875. Eichhorst, 1891. Cohnheim, 1876. Ehrlich, 1886-1900. Schaumann, 1900. Grawitz, 1900.
Bad Air.
Bad Surroundings.
Syphilis and Malaria.
Suppurative Processes and Discharges.
Neurotrophic Lesions. Sasaki, Banti, 1881. Morley Fletcher, 1899.
Ankylostomum. Sahli, 1883.
Bothriocephalus. Reyher, 1886. Runeberg, 1888. Schaumann, 1894. Schaumann and Tallquist, 1898. Schaumann, 1900. Schapiro, 1888. Ehrlich & Lazarus, 1900. Wiltschur, 1898.
Intestinal Disturbances and Lesions.
Altered Digestion, Altered Absorption. Stejskal & Erben, 1900. von Morawski, 1900.
Bad Food, Diarrhœa, Intestinal Putrefaction, Intestinal Auto-Intoxication. (Many Writers.) 1890-1900. E. Grawitz, 1901.
Quincke, 1876. Immermann, 1875. Müller, 1877. Eichhorst, 1878. Bramwell, 1877. Fenwick, 1877. Mackenzie, 1878. Copland, 1881.
ALL SORTS OF MORBID CONDITIONS.
ALL ORDINARY CAUSES OF ANÆMIA.
(Many Writers.) Especially Quincke, 1876-1880.
Silbermann, 1886. Stockman, 1895. Ehrlich & Lazarus, Grawitz, 1895. [1900 Birch Hirschfeld, 1892. Wiltschur, 1893. Pepper & Stengel, 1896. Schaumann, 1900.
D
Wilks, 1857. Pye-Smith, 1875 & 1883.
Lebert, 1858.
Trousseau, 1860.
"WITHOUT DISCOVERABLE CAUSE."
Addison, 1855.
A
Bad or Insufficient Food.
Puerperal Conditions.
POVERTY.
Biermer, 1871.
Chronic Discharges.
Chronic Diarrhœa.
B
"Predisposition" Something over and above.
"Under conditions not yet fully ascertained."
Eichhorst, 1891.
Ehrlich & Lazarus, 1900.
Grawitz, 1900.
Schaumann, 1900.
C
"IDIOPATHIC ANÆMIA."
ADDISON, 1855.
"PROGRESSIVE PERNICIOUS ANÆMIA."
BIERMER, 1871.
"Apart from the usual causes or concomitants of the anæmic state" (Addison).
"A spontaneous origin without clear etiology is the exception" (Biermer).

Key to foregoing scheme.—A, Addison's Foundation: "Without discoverable cause" (1855). B, Biermer's Foundation: "A spontaneous origin without clear etiology is the exception" (1871), and the etiological erection built upon it (1871–1901). C, Large "underpin" variously termed "predisposition" ... "something special" ... "a disproportion between the cause and effect" found necessary to support the overweighted erection built upon Biermer's foundation. D, Protection placed around Addison's foundation-stone by Wilks, Lebert, Trousseau, and by Pye-Smith (1883). "Primary, idiopathic, ... without any symptoms and without any lesions other than those of the anæmia."

Addison's anæmia[20]) his object, nevertheless, was a clear one—viz., to prevent, on the one hand, any tampering with Addison's conception, and, on the other hand, so far as possible, to prevent it from being built in and surrounded by the different etiological conception which even in 1883 (see dates in scheme) was rapidly being built up upon Biermer's foundation.

VI.—AUTHOR'S ETIOLOGICAL CONCLUSIONS.

Such, then, was the origin, and such has been the subsequent development up to the present time of the etiology of the condition described by Biermer and entitled "progressive pernicious anæmia." Such was the way in which the anæmia described by Addison as "idiopathic anæmia" came to be regarded as merely one form of a larger group, so-called "pernicious anæmias," and even up to the present time is still so regarded by many observers who have worked at the disease. Such was the way in which the etiological conception of Biermer has from his time to the present assumed more and more imposing proportions, while the conception of Addison is relegated by these observers to a very insignificant position—dismissed in a sentence as of quite subordinate interest etiologically.[21]

It is little surprising that the great majority of observers since 1871, approaching the etiology of the disease (or diseases) from the side of the progressive pernicious anæmia point of view, have been so impressed with the dimensions and solidity of the structure, that they have hardly noticed—or if they have noticed have regarded as very small and insignificant—the partly hidden stone labeled "Addison's anæmia" "without discoverable cause," in one corner of the foundation. Nor is it surprising that even later English observers approaching it, or desiring to approach it, from the point of view of Addison's anæmia, have also, even while thinking of Addison's anæmia, been unduly impressed with the imposing etiological erection built around it, and have come to speak of "pernicious anæmia" as a condition which may not only be without discoverable cause, but may also be due to many and various causes. (See Scheme.)

The chief etiological conclusion arrived at as the result of my own work on this disease since 1885, now confirmed in every direction by further investigations on 25 cases during the past two and a half years,[22] is this: that the anæmia had in view by Addison is not a form of the heterogeneous group described under the name of "progressive pernicious anæmia"; that Addison's "idiopathic anæmia" is not identical with "Biermer's anæmia" producible by many causes. On the contrary, it is, as he thought, a "very remarkable disease"—one, according to my observations, of *a definite infective nature, in which both clinical observations and necropsy reveal definite infective and hæmolytic lesions invariably associated with the disease and in which a very definite number of points can be got out of the history, throwing light both on the mode of origin of the disease and the sources of infection.*

(To be continued.)

THE MEANING OF URIC ACID AND THE URATES.[1]

BY DR. WOODS-HUTCHINSON,
PROFESSOR OF COMPARATIVE PATHOLOGY, UNIVERSITY OF BUFFALO, U.S.A.

No apology need be offered for taking up again such a time-worn subject in view of the fact that if we do not take it, it will take us. We find, in spite of the spread of so-called temperance, that gout, under its modern name of lithæmia, is still easily *dominus morborum et morbus dominorum*—"lord of diseases and disease of lords," at least in that great group of pathological conditions which do not promptly call death to their relief. It might, however, be regarded as distinctly presumptuous to endeavour to add anything to the superb and monumental mass of work which has been done upon this problem and I will hasten to acquit myself in advance of any intention of doing more than raising the question as to whether some of our hitherto accepted solutions of parts of the problem have stood the test of time and of the advancement of knowledge. If we took as our definition of gout or lithæmia the only one which for various reasons seems to be practicable, disturbance of health associated with the presence of excessive amounts of the urates and uric acid in the urine, obviously the first question upon which it is important to have clear ideas is as to the probable origin of uric acid, and this has absolutely been made the crux of the problem for many years past. We will leave for the present the vital and pregnant question whether in making uric acid the criterion of lithæmia we are dealing with the cause or a symptom, as that can be more appropriately considered later in our discussion.

First of all, what is the source of the uric acid which is present in health? for upon our answer to this will largely depend our view of the cause of its increase in disease. Two answers, or more accurately two groups of answers, have been given to this query. The first, which dominates the popular conception of lithæmia almost exclusively, is that uric acid is a sort of by-product of nitrogenous metabolism, representing the imperfect combustion of proteids—a sort of metabolic "clinker" amongst the urea ashes of the body furnace; the other view is, that it is the normal excretory product of some group of tissues or cells, or parts of cells, in the body. Such a wealth of conscientious and laborious investigation has been done in the light of the first-mentioned view of the origin of uric acid that even to mention the names of the workers would almost exhaust the space at my disposal, so that I must content myself with merely stating the conclusion towards which at present the drift seems very clearly tending, which is that uric acid is in no sense longer to be regarded as a product of the imperfect combustion of proteids into urea, that no mere excess of nitrogenous foods as such is capable of producing it, but it closely depends upon the amount of nucleins, purins, and the alloxur group in the food. Excess of nitrogenous food has been shown by Burian, Schur, Horbaczewski, and Minkowski to result in the increase, not of uric acid and the urates, but of urea, while by the administration of bodies rich in nucleins and purins, such as roe, sweetbread, thyroid extract, &c., the uric acid output could be increased in a marked degree. Finally, by a careful selection of nitrogenous bodies which were especially poor in nucleins and the alloxur group the urea could be largely increased while uric acid was actually diminished in amount. About half our normal output is probably due to this source—the *exogenous* uric acid of Chittenden.

Another hypothesis under this heading which was most alluring from every point of view and which I frankly confess cast its seductive glamour over my mind for many years and was only abandoned with a pang of regret was the so-called "reversion" theory of uric acid formation. Inasmuch as uric acid forms the bulk of the nitrogenous excretion in birds and serpents and in some insects, and bulks much more largely in the urinary solids of the invertebrates generally than in those of vertebrates, it seemed highly plausible to regard it as a more primitive form of nitrogenous metabolism to which, under various disturbances of the general balance of nutrition, the body promptly reverted—in other words, as Garrod put it many years ago, "our gouty patients seem to be a sort of birds." But this pleasant light, I fear, was little better than an *ignis fatuus*, though it took years of somewhat careful observation and numerous tumbles into bog-holes to convince me of that unwelcome fact. Upon closer observation the gravest difficulties are found in the way of such a hypothesis. In the first place, there is absolutely no discoverable relation between either the zoological position, the character of metabolism, of food, temperature, or general bodily habits of animals and the extent to which they excrete uric acid as compared with urea. When we regard the sluggish and cold-blooded serpent alone it seems quite natural to suppose that the slower processes of oxidation in its tissues should result in the formation of the less oxidised product, uric acid, but, on the other hand, the bird, with a temperature of from 4° to 12° higher than the mammal, a creature of most brilliant and excessive motility, living literally at fever pitch, so to speak, still excretes the same sub-oxidised product. Neither can these two families of vertebrates in which this marked excess occurs, birds and snakes, be regarded as in any direct sense in the line of human ancestry, however remote, and as we go more widely

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[20] Acting consistently on this view he stated with regard to cases showing changes in the red marrow (Pepper and Cohnheim), "these cases must be separated from those of idiopathic anæmia."

[21] Ehrlich and Lazarus: Die Anæmie, Part 2, 1900.

[22] See Clinical Journal, 1902.

[1] A paper read before the Washington State Medical Society, Tacoma, U.S.A., June, 1902.

afield and further back down the scale of animal life we find that uric acid is by no means the exclusive, although, on the whole, the chief, product of primitive renal secretion. Some invertebrates excrete almost as large a proportion of urea as of uric acid; in others, guanin seems to take its place (mollusca); in others, hippuric acid, so that I am afraid that we can hardly claim that uric acid is much older ancestrally than urea in vertebrates, although more common in most invertebrates. The solution simply seems to be that both urea and uric acid being satisfactory and economical end-forms of nitrogenous metabolism in the animal body, some classes and orders have found it convenient to form one and others the other. So that uric acid formation in birds and reptiles is analogous with *urea formation* in our own bodies and not with uric acid at all. Finally, the more efforts that were made to investigate the clinical side of the question and to study gout and gouty processes in lower animals, the more unsatisfactory the situation became, for not only did new cases fail to discover themselves but one began to entertain the gravest doubts as to the accuracy of the reports of such cases as had been hitherto reported. For instance, the so-called gouty concretions in the toes and feet of birds were found to be exceedingly rare and when they did occur they were of tuberculous, rather than of gouty, origin, although containing urates which are easily deposited in avian tissues, and gout in the bird, in spite of the enormous excess of uric acid and its antecedents which must be constantly present in its tissues, was found to be a decidedly rare disease. Almost the only animal in which there appears to be reasonable proof of even the moderately frequent appearance of gout was the pig, and even here specimens were few and hard to come across and not particularly convincing when found. Calculi of all sorts were, of course, frequent enough, both vesical and intestinal, but that is another story which I hope to be able to take up on some future occasion. So that as far as the question of the influence of diet upon gout is concerned we can get little testimony of any value from any of the lower animals.

This "imperfect combustion" theory, however, is quite inadequate to account for the presence of uric acid in health for two reasons; firstly, that it could hardly be imagined that a body should, with such extraordinary and constant regularity, fail completely to oxidise about from 2 to 3 per cent. of its proteid output; and, secondly, that the experiments above mentioned, while they have shown that the output of uric acid can be most markedly increased and diminished by feeding with a food rich or poor in nucleins, have also demonstrated that there is a certain level, and that about half the normal half-gramme which is excreted daily in health, constantly present in the urine no matter how completely the food is free not only from nuclein but even from nitrogenous material of any sort; indeed, upon an absolutely nitrogen-free diet.

This, then, brings us to the second theory of the origin of uric acid, and that is that it is the normal end-product of the excretion or of the breaking down of some particular tissue or cell. Some little light has been given us towards the determining of this question by the feeding experiments already referred to, inasmuch as it has been shown conclusively that from nuclein to adenin, from adenin to xanthin, from xanthin to hypoxanthin, and from hypoxanthin to uric acid is merely a series of steps in oxidative and catabolic processes of the simplest order. In fact, the last three mentioned—$C_5H_4N_4O$ = hypoxanthin; $C_5H_4N_4O_2$ = xanthin; $C_5H_4N_4O_3$ = uric acid—differ from one another only by the successive addition of one atom of oxygen to the molecule. Moreover, uric acid can be formed from nuclein by simple oxidation in the presence of air, so that we may be comparatively safe in concluding that whatever cell group is concerned in the production of uric acid in health is a group which is rich in nuclein.

Two possibilities are thus open to us—one that the uric acid is the product of some group of cells which are exceedingly rich in nuclein and which normally undergo a considerable amount of disintegration in the day's work, or that it simply represents the wear and tear of the nuclei of the body cells wherever situated. The latter proposition seems hardly tenable as both the earlier and later views of the nucleus make us regard it as emphatically a creature, and if the figure may be pardoned, a "boarder" of the cell, taking its nourishment from the cell protoplasm and returning its waste product to the same medium, so that the only way in which the direct product of its decomposition could get into the circulation would be by the death of the cell. Of the tissues particularly rich in nuclein we have, of course, several which might be considered as possibilities—the lymph nodes which consist largely of nuclei within thin cell walls, the spleen, and the thyroid. In none of these, however, does it seem likely that a sufficiently rapid rate of disintegration is going on to supply dead nuclei enough for the production of even the small normal amount of uric acid. There is, however, one tissue in the body, and that none the less a tissue because it is not tied together or anchored in any way—that is, the great brotherhood of the leucocytes—which fulfils both the required conditions of the abundance of nuclein, in their large nuclei, and a sufficiently rapid rate of constant disintegration in the process of neutralising infectious toxins introduced into the body. As the starvation experiments referred to have clearly shown that nearly half the normal uric acid secreted is due to the destructive metabolism of the body tissues, the *endogenous* uric acid of Chittenden, and in this destruction the leucocytes certainly bulk largely and are the most readily ascertainable index of the change, I now propose briefly to examine the clinical evidence which is just as real and convincing as chemical or pathological data with reference to its bearing upon this theory of origin.

First of all, is there any parallelism between those disease conditions in which excessive leucocytosis and corresponding tissue destruction are known to occur and the excretion of uric acid? Upon what we might term the positive side of the problem there is a parallelism and a striking one, as Levison has pointed out, since nearly all the acute febrile conditions in which leucocytosis occurs—such as pneumonia, rheumatism, appendicitis, and septicæmia—are attended by a large increase in the output of the urates. On the other hand, those diseases in which there is a marked absence of leucocytosis or in which, if it occurs, it is slight in extent—such as pulmonary tuberculosis (before secondary infections), certain forms of rheumatism, typhoid fever, and cholera—are seldom attended by an excess of urates in the urine. Furthermore, there is a very curious group of diseases which have been a stumbling-block in the way of the believers in the uric acid theory of gout for many years past, and that is the leukæmias and chlorosis, also various forms of nephritis, dyspnœas of both cardiac and pulmonary origin, in any of which, though not all, a large amount of uric acid will be excreted and yet not a single symptom of gout or lithæmia be produced. This is also shown in childhood when positive showers of uric acid may occur in the urine in conjunction with a very high leucocytic count but without a single gouty or lithæmic symptom. Especially striking is this parallelism during the first few days of life when the napkins may be stained red with crystals of uric acid just at the time when the entire stock of nucleated, red blood cells is being broken down and replaced by new erythrocytes of the adult type.

The exceptions are numerous, and I am fully aware that there are numerous conditions in which a marked leucocytosis may occur without any corresponding increase in the output of uric acid, and on the other hand we do not as yet positively know that in the disease itself which we are considering the number of leucocytes is always increased. It should further be stated that we are still quite in the dark as to what is precisely the meaning of the symptom, leucocytosis. Cabot and other leading authorities on hæmatology are inclined to regard it as largely due in many cases merely to an increase of the number of the leucocytes within the walls of the blood-vessels brought about by their migration from the intercellular spaces of the tissues, so that there may be no actual increase in their total in the body. Further, it by no means follows that the presence or even formation of leucocytes in excess will be attended by a corresponding destruction of these cells, which is required in the production of uric acid upon this hypothesis. One, at least, of the most prominently alleged discrepancies in the leucocytic origin of uric acid, that the normal digestive leucocytosis is frequently not accompanied by a rise in the hourly uric acid output, is in my judgment not conclusive or even valid, inasmuch as this digestive leucocytosis is merely a swarming of the leucocytes into the circulation to feed upon the readily soluble portions of the newly introduced food, not of course, be it well understood, with intention and intelligent forethought on their part, but in response to chemotropism. Our knowledge of the actual occurrence of leucocytosis in gout itself is as yet incomplete and unsatisfactory, in which respect it differs but little from our knowledge of the

chemistry and pathology of this puzzling disease. In frank gout of the classic type, with throbbing toe and distended arterioles, it is I believe usually present, as it would be in any other acute inflammatory condition. In the so-called latent or lithæmic form it has been found by Croftan to be present in some and absent in others, so that until a much wider and fuller study shall have been made of its relations to this condition we cannot pronounce positively in regard to it. The researches of Croftan, however, do indicate very distinctly that leucocytosis was present in a considerable majority of the cases examined and that in nearly all of them the occurrence of polynuclear basophilic leucocytes was a marked and striking feature. In any case, however, it must be remembered that it could only be during or just before the acute attack, when alone the increase of uric acid is distinctly marked, that we could expect to find an increase of leucocytes.

This, then, brings us fairly to the question, Is uric acid, with its congeners or precedents, the cause of gout and the lithæmic state or merely a symptom? On the one hand, we find the bulk of English and American observers, and on the other the mass of the continental, headed by Levison and Ebstein. On the face of it the former theory appears far the more probable, for we have apparently naked-eye proof of its correctness, in the form of visible deposits of the urates of sodium, forming the tophi and acting as apparent irritants in the inflamed joints; while the acute attack is usually accompanied by a great increase in the excretion of urates and its decline by a corresponding diminution. Garrod and many other observers declare that the amount of uric acid in the blood itself of gouty patients is markedly increased, while Haig furnishes us with a graphic picture of solid crystals of uric acid, crystallising out of the blood stream in the sheaths of the nerves, in the parenchyma of the kidney, in the mucous membrane of the nose and throat, the tissue of the tonsils, and every other region which furnishes an ache in gout, giving rise to the chronic neuralgia, nephritis, rhinitis, and tonsillitis of gouty subjects. But the value of this evidence has been greatly undermined of late years. In the first place, very serious doubt has been thrown upon the power of uric acid as such, or even of urates, to give rise to serious irritation in the tissues. It is alleged to be almost absolutely non-irritating, as much so as its relative urea, in support of which might be advanced the facts already alluded to, of its occurrence in large amounts in some of the leukæmic conditions without giving rise to any irritation whatever. The same is true in children, where it will be present in perfect showers in the urine without giving rise to any symptoms except the renal or vesical irritation due to its mechanical effects. It has also been injected in large amounts into the bodies of animals, as well as administered in their food, with no toxic results whatever or more than purely local irritation.

From the comparative point of view it has been shown that those forms, such as the birds, in which it is normally present in enormous amounts are not in the slightest degree more disposed to gouty formation than are mammals. Indeed, so far as my own necropsies and investigations go, they would appear to be distinctly less so. The oft-cited experiments of Minkowski, in which by ligating the ureters of birds he succeeded in producing an accumulation of urates in the tissues resembling tophi, gave rise to no other gouty or lithæmic symptom, not even to local reactions around the deposits, and only such toxic symptoms as were due to the retention of all urinary excreta. In my necropsies at the London Zoological Gardens I repeatedly found small masses of urates just under the surface of the pericardium and the peritoneum, and even upon the valves of the heart itself, in birds and reptiles without giving rise to any symptoms of local irritation. More serious yet, the actual occurrence of uric acid as such in the blood or living tissues, in any circumstances, is most gravely doubted, and even the urates seem incapable of accumulating in appreciable amounts in other than fibroid or necrotic tissue. The results of the earlier observers are now regarded as due to faulty technique and the impossibility of distinguishing between the innumerable forms of proteid extractives. Indeed, since the experiments of Gaucher in 1884, the majority of chemists and pathologists have pretty well abandoned the theory of the toxic action of uric acid and the urates in gout and have fallen back upon the earlier and less oxidised members of the alloxur group, xanthin, hypoxanthin, and paraxanthin. Among them Kolisch, Rachford, and Croftan have made out an exceedingly good case in favour of these being the actual toxic elements in gout and lithæmia.

But even these findings are now sharply challenged by other investigators, Solkowski and Frederick Müller in particular, upon the ground that from faults of technique the estimates of the amounts present were altogether too high, and that there is no adequate evidence that the alloxur bases are, in any way, increased in the blood or tissues in gout. And although Rachford and Croftan, in a most interesting series of experiments, have shown that their prolonged injection is capable of giving rise to a variety of toxic symptoms, arterio-sclerosis, and degenerative changes in the kidney, yet they have utterly failed to produce the characteristic arthritic changes and fall far short of a complete picture of gout. So that it seems to me, from consideration of the evidence, that we can scarcely do otherwise than enter against the charge that uric acid or its precedents are toxic elements in gout the Scotch verdict of "not proven." In short, the appearance and behaviour of uric acid in gout are precisely like those in any other acute intoxication such as plumbism, phosphorus poisoning, and acute yellow atrophy of the liver, in all of which it is excreted in abundance. As Magnus Levy has shown it is *only one of the various products of destructive tissue metabolism* excreted at this time, as it is always accompanied by large amounts of other nitrogenous extractives in the urine. Not only so, but the same observer has shown a marked increase in nitrogen retention in the tissues after the attack and corresponding diminution in the urine, just as in convalescence from any fever or other acute toxic attack. Last, and most significant of all to the cytologist, is the marked increase of phosphoric acid in the urine during a gouty attack. As has been shown by Futcher (Osler) the curve of uric acid output runs in a striking parallel with that of phosphoric acid.

What does this mean? Simply, that as all nucleins are composed of a phosphoric acid element, nucleic acid $C_{40}H_{59}N_{14}O_{22}2P_2O_5$ united with a purin or adenin base, we have here *the other moiety of the nuclei of the cells which have been destroyed in the toxic process.* We might as justly blame phosphoric acid for the attack as uric acid. Both are symptoms.

What light does our dietetic and medicinal treatment of gout and the lithæmic state throw upon the question of causation? Certainly nothing in favour of the uric acid theory. The two substances which are clinically recognised as being by far the most active and constant elements in the production of gout and goutiness are not even nitrogenous bodies, but pure carbohydrates, alcohol and the fruit-sugars. While there appears to be a certain amount of parallelism between the amounts of nuclein and purin bases in certain classes of food, and their tendency to produce gout—namely, the red meats, caviare, the osmazomes, and the extractives generally—yet on the other hand it must be remembered that all of these may be consumed in enormous amounts without the production of a single gouty symptom. Trappers, hunters, Arctic explorers, rancheros, living for months on an exclusively meat diet, seldom or never develop symptoms of gout or even lithæmia. Among birds and animals gout is as rare in flesh-eaters as in grain-eaters, and the only species in which it occurs to an appreciable extent are the parrot (a fruit-eater) and the pig (a mixed feeder). An excess of starches or sugars in conjunction with a moderate amount of nitrogenous elements in the diet will promptly produce gout in susceptible subjects, and last, but not least, the action of the purin group of extractives in red meats would appear to lie more in the fact that they are the principal flavouring elements of the class of foods which are most fascinatingly attractive to the palate and hence most likely to be indulged in to excess; so that their tabooing will usually practically result in a marked diminution of the actual amount of food consumed. Lastly, it must be remembered that although the amounts of uric acid and the urates in the urine can be enormously increased in both men and animals by a diet rich in nucleins this is by no means gout, nor is it usually accompanied by lithæmic symptoms, except in those who have already been subject to the disease.

What, then, would appear to be at present the most rationably tenable idea as to the nature and causation of gout? In my judgment we have included under the head of gout and lithæmia an enormous number of often utterly unrelated metabolic disturbances of varied origin, whose *sole*

bond of union has been that they were accompanied by an excess of urates in the urine and, in well-developed cases, by deposits in the tissues. In other words, *the unity of the so-called lithæmic group of disturbances depends solely upon uric acid*, which is purely a symptom or index of certain changes taking place in the body metabolism. From this point of view gout would be defined as a toxæmia of varying causation, usually of gastro-intestinal origin, accompanied by the formation of an excess of urates, this excess of urates being due to the breaking down of the leucocytes and fixed cells in the attempt to neutralise the poison—in other words, being the measure of the resisting power of the body tissues. The formation and introduction of the toxins, be it well understood, are by no means confined to the gouty; it is only *the nature of the resistance* of the body to them that gives the character of gout.

From this point of view our patients may be roughly divided into three great groups, first, those in which leucocytosis (used as an index of, and large factor in, the general resisting-power) is merely deficient; second, those in whom it is moderate but from one cause or another not quite adequate; and third, those in whom the leucocytic scavenging power of the body is abundant for all emergencies. The second of these two classes will furnish us gouty and lithæmic patients. The first group, if exposed to any poison either in food, air, or otherwise, will be apt to succumb promptly to the invasion with the development of acute toxæmic, choleraic, or other symptoms, never rising to the dignity, so to speak, of a lithæmic attack. The diseases to which they are more subject are tuberculosis, typhoid fever, and certain forms of chronic rheumatism, in all of which the leucocytic action is now known to be below the normal and leucocytosis both rare and difficult to produce. This tentative definition would also coincide with the alleged, and as I believe genuine, antagonism which appears to exist between lithæmia and tuberculosis. We seldom find a development of tuberculosis in our lithæmic patients—if it does occur it is usually of the so-called chronic or fibroid type—and the occurrence of a well-marked deposit of urates in a tuberculous patient, in any stage short of cavity-formation, has always proved a most hopeful sign in my experience. I am aware that accurate data in any considerable mass in regard to this alleged antagonism are yet lacking, but nearly every practitioner of experience seems to be imbued with the belief and has seen cases which illustrate it, and such systematic work as has been done has strongly corroborated it. For instance, Croftan has investigated the history of 100 consecutive arthritic patients in the Philadelphia hospitals and found that only one out of the number had ever developed pulmonary tuberculosis. In 200 consecutive cases of advanced tuberculosis he found only three with arthritic manifestations. In a similar number of patients suffering from pulmonary tuberculosis in St. Joseph's Hospital Reilly found a history of arthritic and other lithæmic complications, apart, of course, from the well-known tuberculous neuritis and synovitis, in only six cases, and of these three presented a slow "fibroid" type of the disease with a strong tendency to healing by scar formation and a fourth improved rapidly and soon left the hospital. Bernheim has confirmed Croftan's researches and cites several French authorities in support of the alleged antagonism. Anders's recent statistics bear out the favourableness of the prognosis in tuberculous cases which give a history of rheumatism. The second group, when the toxins or other poisonous bodies are introduced into the system, will promptly attempt their neutralisation by means of leucocytic action, but the resistance being inadequate the toxins still produce an effect, although a chronic and much modified one, and the leucocytes and fixed cells which are destroyed in the struggle appear in the urine in the form of urates. That leucocytosis and cell resistance are deficient in the gouty is strongly suggested by the fact that the actual uric acid output, between the attacks, has been found to be *below the normal* in many of them. In the third group the poison, if introduced, is promptly neutralised by the leucocytes without any unusual amount of fatalities in their part, hence the system is protected from the attack with little or no increase in the amount of urates excreted.

Of course it must be remembered that these classes are by no means hard and fast, or constant, in their boundaries, but that an individual who normally would be in the third class of abundant, adequate leucocytosis and general resisting power might, from an ingestion of an excessive amount of poisonous material, or during depression of the general vitality or disturbance of the general health, succumb to the attack and fall into the second, even the first class. This view would also account for the marked increase of urates which will occasionally occur in perfectly healthy individuals after the ingestion of unusual amounts of food or exposure to other toxic influences without the production of any gouty or lithæmic symptoms. In these cases the poison has been introduced, a number of leucocytes have been destroyed, but there is still a sufficient margin of resisting power to neutralise and to expel the poison.

For the sake of convenience we will designate these three classes as the *acytic*, in whom cellular resistance and leucocyte-formation are markedly deficient; the hemicytic or gouty class, in whom the cellular resisting power is fair but not adequate to all emergencies; and the *hypercytic*, in whom the resisting power is adequate to all emergencies. I should regard the division between these classes as much more rigid in, so to speak, the upward direction than in the downward, that is to say, that while the hypercytic or thoroughly normal individual may readily, in circumstances of great stress or an unusually severe invasion of toxic material, drop into the hemicytic or much more seldom into the acytic class, and while the hemicytic individual may become the acytic under certain conditions, yet the acytic individual will much less readily become hemicytic or the hemicytic hypercytic. In other words, patients who with any degree of frequency reach the hemicytic or lithæmic level will rarely be found to become tuberculous, and once gouty always lithæmic.

What are the considerations which seem to point towards the view that "gout" is a group of direct intoxications of widely-varied origin and entirely independent of uric acid? First of all, there is the most significant fact that, as has been known from time immemorial, all the lesions of gout, arterio-sclerosis, degeneration of the kidney, neuritis, neuralgia, muscular pains, and perfectly characteristic tophi, can be produced by a poison which is not only non-nitrogenous but not even organic; that is, lead. According to Garrod 30 per cent. of hospital cases of gout give a history of chronic plumbism. Here, I think, there can be little or no reasonable question of any specific influence on the part of the urates. To have a so-called auto-intoxication of endogenous origin reproduced with absolute fidelity in every symptom and result by a metallic poison is, in my mind, a most serious and significant flaw in the theory. Secondly, we have a most notorious factor, over which probably the most furious and acrimonious controversy has raged in the whole wrathful question of gout, and that is alcohol. There is probably no question upon which it is more unsafe to be dogmatic than this. On the one hand, wider acquaintance with the lithæmic state shows us that not merely its characteristic symptoms but even attacks of true gout itself occur—and, indeed, in my experience the former are frequent—in total abstainers and in prohibition communities. The familiar myth, for instance, of the absence of gout or lithæmia in America is rapidly fading away in the light of broader knowledge and more careful study, and this with no marked increase in the consumption of alcohol. We must remember that alcohol in some form is as regular an article of diet and staff of life in every part of the world—except a few of our puritanical western communities—as bread, and that the mere fact that the gouty individual uses alcohol in some form has no necessary connexion with his disease. The great majority of moderate drinkers escape entirely. Thirdly, there is abundant clinical evidence that certain readily-fermentable sugars—such as those contained in the richer fruits, preserves, pies, &c., and even starches, such as those of potatoes or pastry—are almost as capable of producing an attack in gouty subjects as wine or beer. A prominent London clinician once assured me that a slice of gooseberry-tart would produce an attack in some of his gouty patients as promptly as a glass of port. Yet, when all deductions have been made, while we may fully recognise the fact that the liberal use of alcohol, particularly in the form of spirits, may have no injurious effect whatever, even upon gouty individuals, yet there can be little question that there is an overwhelming preponderance of the use, and in many cases the excessive use, of either malt or vinous liquors in those who are the subjects of gout.

In the light of the toxic origin of the disease it would seem highly probable that we were actually dealing with a direct intoxication, either on the part of alcohol itself or, as

seems more likely, some of the other readily fermentable carbohydrates, either of the ether, ester, or acetone group, in which the sweeter, more fruity wines, which are so infinitely more effective in the production of gout than any other form of alcohol, are particularly rich. So that we appear to have two instances in which toxic substances, produced entirely outside the body, are capable of producing the disease—not only so, but are probably responsible for its production in something like 50 per cent. of all cases.

As we study more carefully each individual case of the disease which confronts us I think we can hardly help being more and more inclined to the conclusion that we have to deal either with some form of more or less direct external intoxication or some impairment of the normal digestive and assimilative processes of the body, which results either in abnormal poisonous products being formed in the alimentary canal or in excessive absorption of the toxic substances which are normally present in the process of digestion. I believe that in the future our study of the diet of a gouty patient will be more with reference to the detection of substances which, either in themselves or in the conditions of nutrition obtaining in the cells of his intestinal wall or possibly of his liver, are capable of producing intestinal putrefaction and consequent auto-intoxication than with reference to either their nitrogen- or nuclein-content. Nowhere is it more necessary to remember, as Roberts and Osler have with special emphasis reminded us, that, in the witty paradox of Moxon, "it is quite as important to know what kind of a patient the disease has got as to know what sort of a disease the patient has got." Time and again have we found that the question of our ability to relieve our patients from the torture of their toxæmia has depended upon our ability to correct some vice of bodily habit. It may be in exercise, in bathing, in sleep, in mental stress, in hurry after meals, even in errors of refraction, that the crux of the lithæmic problem will be found to lie. Any agency that will improve the general nutrition and vigour and raise the resisting power of our patients may cure lithæmia.

Finally, what data bearing upon the other than uric-acid intoxication theory are to be found in our experience of diet and drugs? First, as regards the remedies which have been found effective, we may frankly premise that, long as they have been known and effective as many of them have proven themselves, we are still utterly in the dark as to in what manner they influence either the production or elimination of uric acid. In the twentieth century at least it is scarcely necessary to more than mention the collapse of all the theories which have been held as to the effect in this disease of any class of remedial agents, especially the alkalies, based upon their either diminishing the acidity of the blood or increasing the solubility of uric acid, since it was years ago demonstrated to the satisfaction of all but a few observers: first, that acidity of the blood is entirely unknown and, indeed, impossible during life, all findings indicating this condition being now known to be due to errors in technique; secondly, that there is no adequate proof that either uric acid or the urates as such are to be found in the blood during life, either in gouty or normal individuals; and thirdly, that it is impossible to administer drugs in anything like adequate doses to alkalinise and to neutralise all the fluids and tissues of the body.

The classic remedies cover an enormously extended range, chemical, botanical, and therapeutic, ranging from sulphate of soda to piperazin, and from colchicum to the salicylates. They are all mysterious and uncertain in their action—in fact, they have only two things in common: one that they relieve gout and the other that they *check intestinal putrefaction* or diminish the absorption of its products. This effect may be produced, of course, in a variety of ways, first, and most potently, as by the saline cathartics, notably sulphate and phosphate of soda and the mineral waters generally, by sweeping out of the alimentary canal the offending material before it has time to form the toxic products or before these can be absorbed; next in order of effectiveness, by direct inhibitive effect upon fermentative changes in the alimentary canal, like the salicylates, guaiacum, phenacetin, menthol, and all the aromatic group; thirdly, by reducing the acids of gastric digestion and possibly, to a certain extent, by directly neutralising the toxins, which are usually acid in reaction, and also by producing by the use of mildly laxative effects as the simple alkalies of all sorts, while colchicum, iodide of potassium, acetate of potash, and the mineral waters are powerful stimulants of renal excretion. In short, almost every remedy which clinical experience has proved to be of value in gout and the gouty state will be found to prevent the formation or absorption of intestinal toxins or to promote their elimination from the system.

Last of all we reach the proverbially difficult question of diet. Here every one of us is an expert and so innumerable are the varieties of our views that I must again be pardoned for giving merely the briefest and most sketchy outline of what appear to me to be the salient facts. First of all I think we will promptly agree, from bitter personal experience, that any attempt to rely in our treatment of gout upon the exclusion of any food or class of food from the dietary, regardless of the circumstances of the case and the other aspects of the problem, will end in disaster. While many of our cases are somewhat improved by excluding the red meats from their dietary and others are benefited by the absolute prohibition of all animal food, except milk and eggs, yet in the majority of cases it will be found that most of our lithæmic patients do better upon a mixed diet, somewhat limited, perhaps, in respect of the red meats and certainly of the sweeter wines, coupled with a marked restriction in the amount of certain starches and sugars, especially potatoes, pastry, and preserves, and the richer fruits, and an abundance of water, mineral or otherwise, than they do upon any exclusive diet. Personally, I am free to say that I find it practically much more frequently necessary to limit my gouty patients in regard to potatoes, pastry, and preserves than I do in respect to meat of any kind. Some of the worst cases of gouty dyspepsia that I have ever seen, attended by an abundant deposit of urates, occurred in women who lived almost exclusively on bread-and-butter, potatoes, sweets, and tea. In a very considerable percentage of cases, in fact, *the fault does not lie in the diet at all*, except in so far as this is deficient in nutritive value, on account of diminished appetite, as not unfrequently happens, or excessive, relatively to the actual needs and combustion-powers of the body. In fact, it seems to me that diet in our gouty and lithæmic patients is chiefly of interest according to the extent to which it favours intestinal fermentation and putrefaction, and as some of the most acutely and frequently toxic products of disordered intestinal digestion are non-nitrogenous, such as the acetone, oxalic, and butyric acid groups, they may be derived as readily from an excess or disproportion of carbohydrate as from an excess of nitrogenous foods.

It may perhaps be advisable to refer briefly to the well-known views and experiments of Alexander Haig. First of all, it might be pointed out that nearly every physiologist or expert chemist who has expressed himself in regard to these views has either utterly repudiated them or expressed the gravest doubts as to their correctness. Primarily, because they are absolutely and entirely based upon the position, now known to be untenable, that uric acid represents a waste or imperfect product of urea metabolism, and that the percentage or relation between the output of uric acid and of urea is a factor in the problem. Every physiologist and chemist of eminence who has written upon the question within the last three years has declared positively that urea and uric acid are the end-products of a totally different series of metabolic changes. Practically they are as distinct from each other as the urine from the fæces. This, of course, fundamentally upsets his entire series of conclusions. Secondly, the overwhelming consensus of opinion among physiologists is that the process by which his theory would have us believe that uric acid is deposited in the tissues when the blood is acid—which it never is—and dissolved out into the blood stream again whenever this becomes alkaline, is practically impossible in the living body, or at all events there is no shadow of evidence that it actually occurs, and that even if it were possible its effects upon the nervous system, in the production of neuralgia, headache, vaso-motor rhinitis, and the like, would be utterly incapable of explanation unless it were much more highly toxic and more readily capable of passing through the cell wall than it is now known to be. Thirdly, that the method upon which he relies for the determination both of urea and uric acid and the detection of the presence of the latter in the blood are antiquated, untrustworthy, and, in the language of Edsall, "utterly unsuited for serious investigation."

Although his interesting diet experiments have shown the

possibility of increasing the amount of uric acid excreted by the administration of certain articles of food, this is subject to the grave deduction as to whether uric acid is in any sense the active cause of gout; and, secondly, he has never shown, in reasonably healthy individuals, that any other symptoms of gout, except uric acid, can be produced by such modifications of diet. In short, his premisses, methods, and conclusions are unconvincing to the last degree, and I frankly confess that I can hardly repress my astonishment when I see how widely his views have been accepted. It may, however, be objected, with much greater weight, if animal foods have no connexion with gouty disturbances, why has it been so universally the habit of clinicians either to forbid or to limit markedly their use in gout? This fact, I think, is susceptible of explanation, at least in part, upon two grounds, first, upon the fallacious principle of reasoning that inasmuch as uric acid is a nitrogenous body it must be derived from nitrogenous elements in the food, and consequently the use of these is to be discouraged as much as possible. Second, and what in my judgment really underlies the practical benefit which is derived from prohibiting or strictly limiting this class of foods, is that they are by far the most attractive and toothsome element in the diet. The one thing that the average man who is financially able to indulge his gastronomic tastes is most likely to run to excess in, both in amount and in frequency, is meat of one sort or another. Take away beef, mutton, venison, game, oysters, lobsters, and all the animal proteid group from the average male dietary and you will have deprived it at once of two-thirds of its attractiveness. Comparatively few men would waste much money in over-indulgence in sweets of any sort, with the exception of certain wines and liquors. In the great majority of cases the practical effect of strictly limiting the red meats, beef, mutton, game, &c., in the dietary is that you actually diminish its amount from 20 to 40 per cent. Few men, especially of sedentary habits, have any very active or aggressive appetite for vegetables and starches, eating them more as a sort of diluents or accompaniments of their meat foods. If deprived of meat they will, in their attempt to obtain an adequate amount of nutriment, eat even larger weights, and certainly much greater bulk of total diet, than when upon a mixed food, yet I believe that in the great majority of even such cases the actual nutritive value of the food taken will be found to be diminished, often markedly so. By cutting off beef, mutton, game, and soups at one end, and wines, fruit, and preserves at the other, you have simply destroyed two-thirds of the pleasures of the table. A diet such as suggested by the enemies of nitrogen, consisting of bread, milk, apples, potatoes, cheese, and green vegetables, would be attractive to no one but a Belgian hare. But, as already suggested, even these processes of partial starvation will prove utterly ineffective in a considerable number of our gouty cases. Instead of diminishing the food value of the diet or restricting any element in it, what is really needed is an increase of combustion power on the part of the body, and this may be brought about first of all and most favourably by exercise, by allowing plenty of time for digestion, by the powerful stimulus of the cold plunge or shower-bath in the morning, and by correcting any deviation from the proper bodily balance which may exist. We are, I believe, quite frequently confronted with the fact in our sedentary patients that their nerve tissues have, so to speak, an appetite for more food than their liver and muscles are able to oxidise. They demand and really require large amounts of food of high nutritive value, any deficiency in which is promptly felt in a lessened working power, but which seem to throw in some ways too great a strain upon their secondary digestion in liver and muscles. In this the cure is not less food, but more exercise, and less mental and more outdoor work.

Finally, it may be stated that the one element which, whether we call it a food or a medicine, has been found to be of the most overwhelming importance and value in the treatment of gout and lithæmia, water, would act most admirably upon a toxic condition from any source: first, by sweeping out both the alimentary canal primarily and the liver, kidneys, and skin secondarily; and secondly, by supplying to the body cells that abundant salt-water bath in which alone they can live and discharge their functions. 99 per cent. of our body cells, we too often forget, are still aquatic organisms and marine at that. What salts are dissolved in it is purely a matter of taste. The one active agent in all the much-vaunted mineral waters is the H_2O. Their alleged solvent effects are now known to be pure moonshine and the wonderful effect of mineral waters of all sorts in this disease is, in my judgment, almost solely due to the one thing which they all have in common—plain H_2O, plus suggestion—not to say humbug—aided, of course, by the pure air of the springs and the excellent hygienic rules of the "*Kur*" or "*Bad*."

The mineral water delusion is one of the strangest survivals in medicine from the times of the "trembling of the waters" in the Pool of Bethesda. It originated most unmistakably in the good old demon-theory days, the potency of the water being rated according to the amount of heat and effervescence from contained gas and, best of all, sulphurous smell and abominable taste, all of which to the primitive mind were clear and convincing proofs that it issued directly from the infernal regions, was possessed by spirits, and hence was peculiarly suitable for the casting out of devils by Beelzebub. Either sparkle, heat, or brimstone taste is still the popular requisite for the success of a mineral water. If it has all three it inspires a confidence little short of that of Montaigne in the waters of Cursena, which he declares "powerful enough to break stones" (Osler).

But the apparently most serious objection to the other than uric acid intoxication theory of gout is yet to be considered, and that is the actual occurrence of a deposit of urates in the inflamed joints and tissues. Surely here is a physical demonstration of their causative action. Here, as nowhere else so keenly in this discussion, are the necessary limitations of both space and patience irksome to the last degree, but, I fear, necessary nevertheless. A whole chapter should, and I hope some day will, be written on this fascinating aspect of the problem. For the present the barest suggestive outline must suffice of the reasons which lead me to regard tophi and their congeners as purely symptomatic in their character. First, the overwhelming balance of the injection experiments referred to shows clearly that the urates are either non-toxic or *so feebly so as to be utterly incapable of accounting* for the furious outburst of frank gout; secondly, that their deposit in the tissues by no means coincides with the acute attacks, but, on the contrary, is more apt to occur during the intervals; thirdly, that their formation and deposit in large masses and amounts may, and frequently do, occur without giving rise to any symptoms whatever, or even attracting the attention of the patient; and, fourthly, that they can be produced in abundance by the prolonged ingestion of a purely mineral poison—lead. In short, that they behave precisely like the reaction products of fibrous tissues stimulated by any slowly acting toxic substance.

But the questions still remain, Why are such deposits confined to gout and why do they attack so exclusively the joints and bones? If, however, we regard "gout" as simply a term applied to the reaction to a wide variety of poisons in patients of a certain middle grade of resisting power the first objection loses most of its force. Tophi form in the gouty in response to any intoxication because the cells have sufficient resisting power to, so to speak, die in opposing its action and form urates. They do not in the acytic because the cellular resistance is absent—the body submits without a struggle, as it were—nor in the hypercytic, because the resisting forces are sufficiently abundant to neutralise both the poison and if necessary to dispose of their own casualties as well. Besides, this deposit is not confined to true gout but occurs in chronic plumbism, which is, in my judgment, not gout at all.

In the question why these toxic substances wreak their heaviest vengeance upon the joints and their surroundings we are simply facing that great metabolic problem, Why do so many other poisons show the same preference? What of the extraordinary susceptibility of the joints to the poisons of rheumatism, of gonorrhœa, of tuberculosis, of pyæmia, of syphilis? This problem calls for a complete monograph and a most interesting and important one, and even then we could not yet answer the question. We know certainly that the bones and joints are points of poorest blood-supply, of slowest circulation, and of feeblest metabolism in the entire body. Bony tissues, in spite of their physical hardness, are the class of lowest vitality in the cell state, most easily injured, slowest in repair, and slowest in growth. Almost every inflammation if it lasts long enough—tubercle, syphilis, septicæmia—wreaks its heaviest vengeance upon, and is last to be dislodged from, bone. And we are beginning to have a suspicion, slowly mounting to a belief from a comparative point of view, that our bones are merely the half-dead

calcified cores of our limbs and metameric segments, probably excretory in their origin, like the shell of the oyster and the chitine armour of insects and crustaceans, and that the localised deposition in the tissues of large amounts of nitrogenous waste products is one of the necessary precedents and accompaniments of all calcification processes, whether the result be bone, calculi, or the plates of atheroma, all of which occur in gout. Tophi, if they persist long enough, come to contain both phosphate and carbonate of lime, and the gouty nodosities about a joint ultimately form true bone with surprising frequency.

In conclusion, I would submit the following propositions which seem to me in the light of our present knowledge to outline the most rationally tenable view of gout and lithæmia. 1. There is no connexion whatever between the production of urea and of uric acid, hence interdiction and marked limitation of animal or of nitrogenous foods, as such, in gout is irrational. 2. The uric acid produced in health comes exclusively from two sources, the larger moiety, or *exogenous* uric acid of Chittenden, from the nucleins and purin bases of the food, the smaller, or *endogenous* moiety, from the destructive metabolism of the nucleins of the body tissues. 3. It is the *endogenous moiety alone* which is increased in gout and lithæmia. 4. Gout and lithæmia are mere symptom names for a miscellaneous group of chronic toxæmic processes of widely varied origin, characterised by the production of uric acid and the urates. 5. By "gouty diathesis" we mean the possession of a sufficient degree of resisting power on the part of the protective cells of the body to oppose the entrance of any poison, whatever its character or source, with consequent destructive metabolism and production of uric acid, but not adequate to neutralise or successfully to prevent its absorption. 6. The uric acid of gout, like the phosphoric acid which invariably accompanies it, is merely a result and measure of the destructive metabolism of the nucleins of the body cells, chiefly probably of the leucocytes, in response to the invasion of poisons or toxins, either organic or inorganic (lead, phosphorus, alcohol, acetone). 7. Hence the use of lithia or other "solvent" agents is irrational and any benefits resulting are to be explained on other grounds. 8. As most of the toxins setting up this destructive metabolism and consequent uric acid production are of intestinal origin or entry *diet in gout should be regulated solely with regard to the diminution of intestinal fermentation and putrefaction.* 9. As animal foods from their much more appetising and attractive flavours are more apt to be indulged in in excess of the oxidative powers of the body, their limitation may be found to be more frequently necessary than that of vegetable foods, but sugars and starches are also very often at fault. 10. As uric acid and the alloxur group are not toxic, or at best feebly so, and are not the cause of gout the prohibition of even foods rich in nucleins and purin bases, such as red meats, roe and sweetbreads, has no rational basis and is clinically of doubtful utility except by diminishing the attractiveness of the dietary. 11. The rôle of the liver in gout is a negative one, being inability to perform its chief normal function as a "poison filter," and to absorb or to transform into harmless excretory substances the excess of toxins brought to it by the portal vein. 12. The drugs found of value in gout owe their efficacy chiefly to their power of checking intestinal putrefaction or of preventing the absorption or promoting the elimination of its products.

Portland, Oregon.

THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS.[1]

BY B. G. A. MOYNIHAN, M.S. LOND., F.R.C.S. ENG.,
SENIOR ASSISTANT SURGEON, LEEDS GENERAL INFIRMARY; CONSULTING SURGEON TO THE SKIPTON HOSPITAL AND TO THE MIRFIELD MEMORIAL HOSPITAL.

IN the following paper I propose to tabulate and to make comment upon a series of cases of gastric and duodenal ulcer which I have had under my care. Operative treatment may be required in perforation of a gastric or duodenal ulcer, in hæmorrhage manifest either as hæmatemesis or melæna, and in chronic ulcer of the stomach or duodenum producing stenosis in the body of the stomach or near the pylorus, dilatation of the organ, or persisting and intractable dyspepsia. The indications for the treatment of the first of these complications, "perforation," have been so carefully studied and so definitely set forth by various recent writers that I shall be content with a mere statement of my experience. Of the two latter forms, hæmorrhage and chronic ulceration, producing dilatation or inveterate dyspepsia, but little has been written by the surgeon and I therefore propose to deal with these at greater length and with fuller detail.

1. *Perforation of gastric or duodenal ulcers.*—Perforation may be acute, subacute, or chronic: acute when the ulcer gives way suddenly and completely and the stomach contents are free to escape at once into the general peritoneal cavity; subacute when the ulcer perforates rapidly but the stomach is empty, the opening small or quickly closed by adhesions or a plug of omentum; and chronic when, owing to limiting adhesions to the anterior abdominal wall, the liver, the pancreas, or any neighbouring structure, the escape of contents is slight and confined by barriers of lymph to a circumscribed area, with the result that an abscess slowly forms and becomes manifest at a later period. In acute and subacute perforation an operation should be advised as soon as the diagnosis is assured. In the very great majority of cases the diagnosis is made with confidence, but unless the patient is seen within the first few hours the initial shock may have passed off, especially when morphia has been administered, and it is then difficult to convince oneself of the extreme urgency of the case. The severity of the symptoms depends upon several conditions: the previous state of health, the size and number of the perforations, the condition of the stomach whether full or almost empty, the bacterial virulence of its contents, and the occurrence of vomiting. The clinical picture presented by an acute perforating ulcer will depend in some measure on the site of the ulcer. If in the fundus, at the cardiac end, or in the body of the stomach, an acute infection of the whole peritoneal cavity rapidly follows; if the ulcer be at the pylorus or in the first portion of the duodenum the fluid is directed down the right side of the abdomen, owing to the hillock formed by the transverse meso-colon at the pyloric end of the stomach. The right kidney pouch is filled and the fluid then escapes downwards into the right iliac fossa and there accumulating gives rise to symptoms and signs which mimic with extraordinary accuracy those caused by an acute appendicitis. Indeed, in 19 cases of perforating duodenal ulcer out of 51 recorded by me in a paper published in THE LANCET of Dec. 14th, 1901, p. 1656, the appendix was cut down upon after a diagnosis of acute appendicitis had been made.

One point which seems definitely settled by my experience in operations upon the stomach is the possibility of recovery from subacute and perhaps even from acute perforation of the stomach without operation. In two cases a diagnosis of perforation of an ulcer had been made by the medical man in attendance. Owing to the inaccessibility of a surgeon the patients were kept under morphia regularly administered and rectal feeding was adopted. At the operation innumerable adhesions were found, more especially near the pyloric end of the stomach, and the extent and position of these suggested that they were the result of an intense local inflammation set up by the bursting through of an ulcer of the stomach. Such cases as these, however, only seem to emphasise the importance of early operation in all cases, for the hazard of spontaneous recovery is immeasurable, whereas the risk of operation is definite. Out of the 10 cases which I have had under my care four patients have recovered. I should consider that this result is as good as one may reasonably expect when the difficulties of securing the case at an early stage for operation are remembered. If statistics are compiled from recorded cases alone a better impression may be derived than this, but every surgeon knows, and has probably experienced himself, the desire for announcing his successes and of quietly postponing any mention of his disasters.

Taking all cases into account, and including those in which death results, perhaps remotely from subphrenic or perigastric abscess, I should estimate the average recoveries at 35 to 40 per cent. In operating I do not excise the ulcer. A continuous suture of catgut taken wide of the ulcer folds the stomach walls over and buries the rent. A second continuous suture of Pagenstecher thread is placed outside the first. I generally flush the peritoneum if much soiled with

[1] A paper read before the Royal Medical and Chirurgical Society on Jan. 27th, 1903.

hot saline solution; if little soiled I wipe it clean with large swabs dipped in saline solution and at once used without being squeezed. Drainage is very rarely necessary.

2. *Operations for hæmatemesis and melæna.*—There has been not a little discussion during the last two or three years as to the propriety of surgical intervention in cases of serious bleeding from gastric and duodenal ulcers. My experience has led me to form decided views as to the kind of case in which operation should be advised and as to the kind of case in which surgical aid is rarely, if ever, necessary. Hæmorrhage may occur from acute and from chronic ulcers of the stomach, and whereas in the latter form the bleeding may vary within very wide limits both as regards quantity and frequency, in the former the clinical history is repeated in case after case with the most remarkable monotony.

Hæmorrhage from an acute ulcer.—When a severe attack of hæmatemesis occurs from an acute ulcer it is but seldom that we can obtain a history of antecedent symptoms of gastric discomfort. Hæmorrhage is in a large proportion of cases (in 75 per cent. according to Fenwick) the first symptom. If earlier symptoms can be elicited on close inquiry they are found to have been as a rule very brief and trivial and to have attracted no serious attention from the patient. The amount of blood lost is always large and it is lost within the space of a few minutes. A pint, a pint and a half, or even more, may be ejected in two or three rapidly succeeding efforts. The general symptoms are those attendant upon any serious loss of blood: collapse more or less profound, blanching, sweating, rapid shallow breathing, thin and quick pulse. The body surface becomes cold, pallid, and clammy; the patient is restless and complains always and constantly of a thirst which cannot be quenched. If the bleeding ceases reaction may soon be noticed, the temperature which had been depressed gradually rises, and may reach 100° or 101° F., and colour returns to the lips and cheek. Thirst and restlessness generally persist. As a rule the outburst of hæmorrhage is not repeated, or if repeated is not severe. A mouthful of blood may be brought up once or twice in the course of 24 hours, but there is rarely more than this. The rapidity of the outpouring of the blood may be gauged with seeming accuracy by noting the appearance of the vomit; bright fluid blood has escaped rapidly from the bleeding vessels, dark brown blood or fluid black as ink has been long stagnant in the stomach and has been changed in colour by the action of the gastric juice. The characteristics, therefore, of the hæmorrhage from an acute gastric ulcer are spontaneity, abruptness of onset, the rapid loss of a large quantity of blood, the marked tendency to spontaneous cessation, and the infrequency of a repetition of hæmorrhage in anything but insignificant quantity.

Hæmorrhage from a chronic ulcer.—In all cases in this group there have been symptoms of chronic indigestion, pain, or fulness after meals and occasional vomiting for months or even years, and there is constant complaint of greater discomfort in the later days. The bleeding varies within the widest limits of frequency and quantity, but speaking roughly we may say that the cases are divisible into two groups. In the one the hæmorrhage is trivial in amount, capricious in onset, and irregularly repeated and is merely an unexpected and, on the whole, an unimportant addition to the usual attacks of vomiting. From time to time a tinge of blood or even a few ounces may be observed in the food ejected in one of the constantly-recurring attacks of vomiting. It is probable that small quantities of blood are not infrequently present in vomited matter or in the stools and pass unobserved owing to the absence of symptoms. The estimates given by authors as to the frequency of hæmorrhage in cases of chronic gastric ulcer vary between 20 and 80 per cent., and this difference is due not so much to the variations in the disease as to the closeness and accuracy and continuity in the observations made with reference to the constituents of the stomach contents and of the fæces. In the second group the hæmorrhage is the predominant feature. In a patient who has been subject for years to hæmorrhage there is a sudden attack of hæmatemesis. This attack may or may not be, but in my experience generally is, preceded by a notable accession of pain and gastric irritability for at least two or three days. The hæmorrhage is copious, half a pint at the least, and very commonly a pint, being lost. After a quiescent period of 24 hours or more a second equally severe attack occurs, to be followed in its turn by a period of quiet which ends abruptly with a sudden and generally a more serious bleeding. In each attack the bleeding is free but is rarely so copious and overwhelming as in acute ulceration. In rare cases, when a large vessel is opened by the ulceration the hæmorrhage may be inundating and cause the almost sudden death of the patient. Such a catastrophe is, however, very unusual. So far as the general effect upon the patient's condition is concerned it is usually noticed that after hæmatemesis from an acute ulcer a speedy recovery is made. The pulse quickly regains its former good volume and the effects of the depletion speedily pass off. In the hæmorrhage from chronic ulcer a persisting anæmia is almost constantly observed and in some cases is an obvious and the most striking feature of the case.

The characteristics, therefore, of the hæmorrhage from a chronic ulcer, omitting the inconspicuous and the immediately fatal cases, are the onset after a long history of digestive disturbances culminating in acute discomfort for a few days, the tendency to recurrence with brief intermissions of a few hours or a day or two, the moderate quantity of blood ejected in each outbreak, and the condition of profound anæmia produced by the repeated loss of blood.

It is mainly in regard to the treatment by operation of these forms of hæmorrhage that differences of opinion have been expressed by physicians and surgeons who have written upon the subject. The most ardent advocate of the early adoption of surgical measures is Dieulafoy who advises that even in a first attack of hæmorrhage an operation should be performed if half a litre of blood is lost. It seems to me that an approach to a successful solution of this most difficult problem of when to operate may best be made by accepting the distinction between hæmatemesis from an acute, and hæmatemesis from a chronic, ulcer and by endeavouring to realise the exact pathological conditions which may be present in each of these varieties. In those cases of hæmorrhage from an acute ulcer in which an operation has been performed the conditions found have been differently described. In many, certainly in a majority, the blood has been observed to come from many simple erosions or superficial pittings on the mucous membrane. It is as though the membrane were quietly "weeping" blood. No spouting vessel has been observed, no single point from which the blood chiefly ran. An abundant oozing from many points is rather the type of bleeding seen. The large quantity of blood poured out is due to the multiplicity of the points from which it oozes and not to the size of any single ulcer. In some a small, round, sharply defined ulcer or two or more such ulcers have been observed and excision or transfixion of the base of the ulcer or ligature *en masse* has been performed. When multiple points of oozing have been found such treatment has clearly been impossible. In such circumstances the cautery has been employed or a styptic has been wiped over the surface, temporary pressure has been made with gauze soaked in some astringent, or, finally, gastro-enterostomy has been performed.

The cases in which a definite bleeding point has been seen and secured or the ulcer excised are certainly in a small majority. In the greater number of cases a general oozing has been observed and some of the measures already enumerated have been adopted. It is perhaps neither easy nor safe to judge of these cases merely by the reports which have been published, but taking into account the characteristic features of the hæmorrhage from acute ulcers, and especially the very marked tendency to spontaneous arrest of the bleeding, it is difficult to be convinced that in these cases of "weeping" mucous membrane any real benefit has accrued from operation; the surgical interference seems rather to have been in the successful cases a complication in what would otherwise have been an uneventful recovery. The question is one, however, which cannot be settled with the knowledge at present at our command, but I am inclined to think that in acute ulceration hæmatemesis does not offer much scope for satisfactory treatment by the surgeon. If, however, operation is for any reason deemed imperative—as, for example, when the hæmorrhage is both copious and recurring—it is probable that a gastro-enterostomy speedily performed will be the most appropriate and most successful method of treatment.

In the hæmorrhage from a chronic ulcer the case is far otherwise. In most of the recorded examples an ulcer with densely thickened base and indurated edges has been more or less readily found; in many the bleeding point has been

seen and the ulcer excised or its base transfixed and the ligatures tied. In others a gastro-enterostomy has been done with perfectly satisfactory results. One can readily understand on examining a chronic ulcer which has bled intermittently how difficult it is for the hæmorrhage to be checked spontaneously. The base of the ulcer is densely hard and the vessel traverses it like a rigid pipe. One side of the vessel is destroyed by the ulceration which makes a ragged hole therein. The vessel is unable owing to the stiffening by chronic inflammatory deposit to contract or to retract and the bleeding can therefore only be checked by the plugging of the opening by a thrombus which may readily be detached or destroyed. In one of the eight cases below recorded in which the hæmorrhage had been excessive and frequently repeated the ulcer was exposed at once; it was on the lesser curvature towards the cardiac orifice. Excision was performed by making an elliptical incision round the base; when the first half of the incision had been made and the ulcerating surface had been exposed the bleeding point was readily seen. The wound resulting was stitched up and gastro-enterostomy was *not* performed. In view of the issue of this case I much regret that I did not make the short circuit. In the remaining seven one or more ulcers were found; in one an ulcer on the posterior surface was excised and gastro-enterostomy was performed to the opening which resulted and in six a gastro-enterostomy alone was thought necessary. It is a striking fact, though possibly a coincidence, that the only case in which gastro-enterostomy was not performed was the only case I lost. That the short circuit is of value in expediting the healing of an ulcer there can be no doubt, but in what way precisely it so acts it is difficult to say. The more ready emptying of the stomach is probably the chief and the most important result of the anastomosis, but the avoidance of, or the nullifying of the evil effects of, a pyloric spasm is certainly a factor.

To sum up, I would suggest that the treatment of hæmatemesis will depend upon the nature of the ulcer from which the blood is coming. In hæmorrhage from an acute ulcer medical treatment alone will suffice; surgical measures will very rarely be necessary. If any operation has to be done gastro-enterostomy will probably prove to be the most effective. In chronic ulcer operation should be advised as early as possible. If readily exposed and not adherent to the pancreas or other organ, the ulcer if solitary may be excised, but a simple gastro-enterostomy is probably sufficient to secure the arrest of the hæmorrhage and the rapid healing of the ulcer.

3. *Chronic ulcer producing stenosis, dilatation, or inveterate dyspepsia.*—In this third group I have included those cases in which the symptoms depended upon chronic ulceration of the stomach. The chronic ulcer if situate at or near the pylorus (on either side) causes obstruction and consecutive dilatation of the stomach, and if in the body of the stomach causes inveterate dyspepsia or hour-glass stomach and possibly also pyloric obstruction due to spasm. In some instances a widespread mesh of adhesions or tough fibrous bands crippling the stomach in its action or warping its outline will be found.

The evidences of old ulceration in the stomach are at times difficult to discover; a slight thickening of the stomach wall or a few firm adhesions to a puckered area on the anterior or posterior surface may be all that can be discovered. Yet these are, as my cases indisputably show, enough to cause severe intractable dyspepsia and to compel in the worst cases a life of invalidism and utter misery. One circumstance that has been repeatedly impressed upon me by my cases is the multiplicity of gastric and duodenal ulcers. It would certainly appear that a gastric ulcer if chronic is rarely solitary. Other ulcers are found in the stomach or in the duodenum. Two ulcers are not infrequently seen in exactly opposing points of the anterior and posterior walls in such positions that if the stomach was held up and a needle was passed through from front to back the bases of both ulcers would be transfixed. In hour-glass stomach, in addition to the central narrowing, a second constriction is often formed at the pylorus and is due in most cases to a separate ulcer, so that a double operation to allow of the emptying of both cardiac and pyloric pouches is necessary. If an ulcer is bleeding freely it may become therefore a difficult question to decide as to which one of two or more palpable ulcers should be excised. When hæmorrhage occurs from an ulcer there has probably been a recent accession of inflammation in the ulcer, deepening it and causing the erosion of a vessel. In such a case a turgid or œdematous appearance or a reddening or recent lymph formation on the surface may be found. But whether hæmorrhage is occurring or whether inveterate dyspepsia is the cause of the operation the treatment may be the same. Excision of the ulcer is certainly not necessary; a gastro-enterostomy will, without question, suffice to effect the healing of the ulcer and will give complete relief. In all cases of chronic gastric ulcer, whatever the position of the ulcer may be, I now perform gastro-enterostomy. In three cases in which the pylorus was markedly stenosed I have performed pyloroplasty. One of the three patients is quite well; he has, indeed, been almost as satisfactory as any stomach case that I have treated. The second patient is very decidedly improved, but he still has occasional slight indigestion. The third patient suffered from a recurrence of the symptoms in a few months and I had to perform gastro-enterostomy; since this operation she has been perfectly well. I do not doubt that pyloroplasty is a safe and suitable operation in a certain number of cases where stenosis is due to a long-healed ulcer and is limited to a narrow ring of the pylorus (a condition of things which is, I believe, rare), but in the very great majority of cases of pyloric obstruction these ideal conditions are not present. Indeed, it is impossible to tell from external examination alone that the ulcer at the pylorus is healed. In comparison with gastro-enterostomy, therefore, pyloroplasty is far less frequently applicable and is less satisfactory and certain in its results. I do not intend to perform a pyloroplasty in any case in the future for even under the ideal conditions mentioned above a gastro-enterostomy acts on the whole better and is, properly performed, not liable to be followed by a recurrence of symptoms. Indeed, I do not know any operation in surgery which is more successful or which is attended by better or more striking results than gastro-enterostomy for chronic ulcer of the stomach. A patient, thin, shrunken, cadaverous, and gloomy in aspect, who has been chiefly occupied in trying to avoid acute attacks of indigestion or vomiting, whose whole attention is concentrated on his stomach, who considers every article of diet carefully before he takes it and by degrees abandons first this dish and then the other, until he is finally reduced to fluids alone, who indeed has never conceived that any other question than that of his own health could seriously interest him, a patient, to say the truth, whose whole existence has been ordered and regulated by his stomach, finds after a gastro-enterostomy has been performed for his chronic ulcer that he can eat what he likes, in any quantity he likes, that he rapidly puts on weight, and that his general sense of well-being is almost beyond belief. From being a misanthrope he becomes an enthusiast and an optimist. I have often wondered with a certain amusement what would have been the result of a timely gastro-enterostomy upon Thomas Carlyle. He might have taken to the writing of comedies and threatened the throne of Congreve. And his portrait 12 months after the operation viewed side by side with that done by Whistler would have proved an eloquent advertisement for his surgeon.

Since I first performed gastro-enterostomy I have used Murphy's button and Laplace's forceps to aid in the anastomosis and have united the jejunum to the anterior and to the posterior surface of the stomach. In all the latter operations I have used the simple suture and have performed the posterior operation after the method of von Hacker. I may briefly describe the steps of the operation. The abdomen is opened to the right of the middle line and the fibres of the rectus are split. On opening the peritoneum a complete examination of the whole stomach and duodenum is made. The importance of this cannot be over-emphasised. A constriction in the body or towards the cardiac end may be most readily overlooked, especially when, as is not uncommonly the case, a marked constriction at the pylorus, seen at once, is ample to account for all the symptoms. Cases of hour-glass stomach which have been overlooked at the operation and a futile anastomosis made between the pyloric pouch and the jejunum are recorded by several distinguished operators, and the mistake is an easy one to make unless a determination is made to examine the whole of the stomach in every case. As soon as the operator is satisfied as to the conditions which exist the great omentum and transverse colon are lifted out of the abdomen and turned upwards over the epigastrium. The under surface of the transverse meso-colon is exposed and the vascular arch formed mainly by the

middle colic artery is seen. A bloodless spot is chosen, a small incision is made in the meso-colon, and the finger is passed into the lesser sac. The opening in the meso-colon is then gradually enlarged by stretching and tearing until the whole hand can be passed through it. It is very rarely necessary to ligature any vessel. The hand of an assistant now makes the posterior surface of the stomach present at this opening and the surgeon grasps the stomach and pulls it well through. A fold of the stomach about three inches in length is now seized with a Doyen's clamp. The clamp is applied in such a way that the portion of the stomach embraced by it extends from the greater curvature obliquely upwards to the lesser curvature and towards the cardia. The duodeno-jejunal angle is now sought and readily found by sweeping the finger along the under surface of the root of the transverse meso-colon to the left of the spine. The jejunum is then brought to the surface and a portion of it, about nine inches from the angle, is clamped in a second pair of Doyen's forceps. The two clamps now lie side by side on the abdominal wall and the portions of stomach and jejunum to be anastomosed are well outside the abdomen embraced by the clamps. The whole operation area is now covered with gauze wrung out of hot sterile salt solution, the clamps alone remaining visible. A continuous suture is then introduced uniting the serous and subserous coats of the stomach and jejunum. The stitch is commenced at the left end of the portions of gut inclosed in the clamp and ends at the right. The length of the sutured line should be at least two inches. In front of this line an incision is now made into the stomach and jejunum, the serous and muscular layers of each being carefully divided until the mucous membrane is reached. As the cut is made the serous coat retracts and the mucous layer pouts into the incision. An ellipse of the mucous membrane is now excised from both stomach and jejunum, the portion removed being about one and three-quarters of an inch in length and half an inch in breadth at the centre. The stomach mucosa shows a marked tendency to retract; it is therefore seized with a pair of miniature vulsella on each side. No vessels are ligatured. The inner suture is now introduced. It embraces all the coats of the stomach and jejunum and the individual stitches are placed close together and drawn fairly tight so as to constrict all vessels in the cut edges. The suture begins at the same point as the outer one and is continued without interruption all round the incision to the starting point, where the ends are tied and cut short. It will be found that there is no need to interrupt the stitch at any point, for there is no tendency on the part of the sutured edges to pucker when the stitch is drawn tight. The clamps are now removed from both the stomach and the jejunum in order to see if any bleeding point is made manifest. Very rarely, about once in ten cases, a separate stitch at a bleeding point is necessary. The outer suture is now resumed and continued round to its starting point, being taken through the serous coat about one sixth of an inch in front of the inner suture. This outer stitch is also continuous throughout; when completed the ends are tied and cut short as with the inner stitch. There are thus two suture lines surrounding the anastomotic opening, an inner hæmostatic, which includes all the layers of the gut, and an outer approximating, which takes up only the serous and subserous coats. For both stitches I use thin Pagenstecher thread. No sutures are passed through the meso-colon and stomach. The gut is lightly wiped over with a swab soaked in sterile salt solution, the viscera returned within the abdomen, and the parietal wound sutured layer by layer. When the patient is replaced in bed the head and shoulders are supported by three or four pillows. The operation lasts from beginning to end about from 30 to 35 minutes, but can be shortened by five or ten minutes if the condition of the patient demands it. Speed in this as in all other abdominal operations is desirable but is to be distinguished from haste. Speed should be the attainment, not the aim, of the operator. With regard to the after treatment there is but little to say; nutrient enemata are given every four hours and the bowel is washed out every morning with a pint of hot water, no fluid is given by the mouth for 12 hours or until the ether sickness is over, then water in teaspoonful doses every 15 minutes is given and the quantity increased and the intervals lessened if sickness is not aroused. At the end of 48 hours milk and a little pudding, soups, and such-like are given. By the eighth day fish and minced chicken are taken and in less than a fortnight solid food will be relished. The patient generally requires a caution not to over-eat during the first month or two, for often the appetite is ravenous.

Regurgitant vomiting has been observed in three cases. In the first it was trivial; it ceased after the stomach had been once washed out. In the second it was greatly lessened by lavage, though the patient had for two months an occasional sudden attack of copious vomiting. A very large quantity of bile was brought up without discomfort, the appetite remained excellent throughout, and the patient gained about five pounds in the first three months. This last case is the least satisfactory of all my stomach operations. I asked him three months after the operation whether he considered it had been worth his while to undergo it and he replied at once, "I'd have it again to-morrow." His relief from pain, his ability to eat any food in any quantity, and his general improvement in weight and health more than compensated for his occasional painless attacks of bilious vomiting. So far as I know there was no difference in this operation from any of the others, and unless the adhesions which tied the pyloric end of the stomach to the transverse meso-colon are responsible for altering the position of the anastomosis I am at a loss to account for the regurgitation. In the third case the stomach was universally adherent; both anterior and posterior surfaces were covered with adhesions. The history of the case showed unmistakeably that the perforation of an acute ulcer had occurred two years before. The posterior surface of the stomach was certainly less adherent than the anterior and I therefore performed my usual operation of posterior gastro-enterostomy. After the completion of the anastomosis I was much dissatisfied with the appearance of things; the jejunum did not seem to "sit" nicely. The opening into the distal loop seemed on a higher level than that into the proximal and I was disposed there and then to perform an entero-anastomosis between the afferent and efferent limbs. I did not do so, but when the vomiting of pure bile came on, as I had anticipated, I re-opened the abdomen at the end of 54 hours and performed the entero-anastomosis. 134 ounces of bile-stained fluid had been vomited between the completion of the first and the beginning of the second operation; after completing the second I passed a stomach-tube and emptied out 22 ounces more, making a total of 156 ounces which had escaped into the stomach in 54 hours. After the jejuno-jejunostomy there was no vomiting at all.

This case has shown me clearly that an error in the proper adjustment of the anastomosing loop is an undoubted cause of regurgitant vomiting. In such a case I should in the future certainly prefer Roux's operation, the "gastro-enterostomy in 'Y,'" to any other. After a perforating ulcer has healed, adhesions which are universal and bewildering in their complexity may form. If one surface, anterior or posterior, is free from adhesions that should be selected for the anastomosis; if both are involved I should prefer the posterior. A stomach so warped by the puckering and contraction of adhesions may, however, alter its shape and position under the new mechanical conditions following upon the gastro-enterostomy, and a subsequent alteration may occur in an anastomosis which at the time seemed correctly made. To avoid any risk of immediate or future regurgitant vomiting I should in such circumstances perform Roux's operation and thereby avoid any possibility of accident. My experience is much more favourable than that of most surgeons in this matter. Mikulicz, for example, lost seven cases out of 74 from regurgitant vomiting. In seven more an entero-anastomosis was performed and of these three died. I attribute the infrequency of regurgitant vomiting to two details in the operation: first the obliquity of the opening into the stomach, the lowest part of the opening leading into the distal loop of the jejunum, so that with the patient propped up in bed fluid gravitates into the small intestine; and secondly, the removal of the mucous membrane which results in the opening keeping patent and prevents a pouting of the cut edge of the mucosa from narrowing or even blocking the opening.

In connexion with the operation of gastro-enterostomy the following points are worthy of attention. 1. The sterilisation of the mouth, stomach, and jejunum. As soon as the patient is admitted for operation the preparation of the mouth is begun, the teeth are cleansed and brushed frequently with Condy's fluid; all food given is liquid and is sterile. The stomach is washed out twice, once about 36 hours before the operation and again about six hours before, with tepid boiled water. Calomel is given 48 hours before the operation. 2.

Gloves made of thin indiarubber and boiled are worn by the operator and assistants and nurse. 3. The hands are washed and instruments rinsed in salt solution; no antiseptic is allowed to touch the peritoneum. 4. Scrupulous care is taken to avoid any possible infection from the mucosa. The scissors and clips which touch the mucous membrane are at once laid aside and not used during the subsequent stages of the operation. As soon as the mucous membrane suture is completed the gut is lightly washed with saline solution and the hands are thoroughly well cleansed.

The following is a summary of the cases upon which this paper is based. Perforated gastric or duodenal ulcers, 10 operations and four recoveries; gastro-enterostomy for chronic ulcer, &c., 51 cases and one death; and pyloroplasty, three cases with no deaths. Eight cases were operated upon for hæmorrhage. In one the ulcer was excised; the patient died on the eighth day. In one the ulcer on the posterior surface was excised and a gastro-enterostomy was performed; the patient recovered. In six cases gastro-enterostomy alone was performed; all the patients recovered.

Leeds.

SUPPRESSION OF URINE IN A CASE OF OVARIAN TUMOUR AND PREGNANCY; REMOVAL OF TUMOUR AND UTERUS; RECOVERY.[1]

BY BERNARD PITTS, M.A., M.C. CANTAB., F.R.C.S. ENG.,
SURGEON TO ST. THOMAS'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET; CONSULTING SURGEON TO ST. JOHN'S HOSPITAL, TWICKENHAM.

ANURIA from pressure by a non-malignant tumour is exceedingly rare and the cases recorded have been by pressure from pelvic tumours on the ureters. The case related below is quite exceptional in that the pressure appears to have been upon the kidneys and their vessels and was caused by the combined effects of a very large multilocular ovarian cyst and a pregnancy of about six months. The patient was under the care of Dr. Martindale C. Ward in the St. John's Hospital, Twickenham, and I am indebted to him for the history of the case and for permission to bring it before the Medical Society of London.

The patient was a woman, aged 44 years, who had been married 20 years. She had had seven living children. Her eighth confinement occurred in February, 1895, when she was delivered by Dr. Ward of a stillborn child at the eighth month. The case was one of placenta prævia, a large mass of placenta and the right arm up to the shoulder presenting. On examination a good deal of bleeding took place but she was speedily delivered by turning and made a good recovery. Her abdomen remained large but no abdominal growth could be discovered. Some weeks afterwards, however, the patient detected a hard lump on the left side of the abdomen. This lump gave no pain but gradually increased in size and felt, as she described it, like a large cricket-ball. The patient continued to menstruate regularly up to September, 1898, when all the signs of pregnancy occurred, including morning sickness for a month. When the sickness ceased she noticed that she was increasing in size very rapidly and at length, being unable to get about the house properly, she sought Dr. Ward's advice at Christmas, 1898—i.e., three years after she first discovered the tumour. Dr. Ward found the abdomen enormously but equally distended, the measurement round the umbilicus being 44 inches. The bowels were much confined and the urine was high-coloured but free from albumin. There was no œdema of the legs. On vaginal examination the os uteri could be felt high up and dilated to the size of a two-shilling piece, and a tense bag of membranes could be felt. After a course of purgatives and diuretics the measurement round the umbilicus was reduced by two inches and the patient felt more comfortable. The reduction in size was almost confined to the right side, and in the centre and left part of the abdomen a hard tumour was manifest, but fluctuation could be made out in places. The os uteri was still high up but was now completely closed.

On Jan. 4th, 1899, at Dr. Ward's request, I examined the patient and we decided that as she was suffering much distress from a large ovarian tumour complicating pregnancy the removal of the tumour should be undertaken. She was admitted to a small ward in the St. John's Hospital for this purpose on Jan. 11th. After admission further symptoms quickly developed. The measurement round the umbilicus increased to 46 inches and the urine became scanty and albuminous. On the 14th only ten ounces in 24 hours were passed and in spite of treatment this small amount diminished until on the 17th only one ounce was passed and drowsiness and evident symptoms of uræmic poisoning set in. The temperature was slightly raised—100° F. at night. On the 18th, there having been complete suppression of urine for 16 hours, I saw her again in consultation with Dr. Ward and it was felt that an immediate operation was the only chance to save life. Dr. H. H. Murphy administered an anæsthetic and with Dr. Ward's assistance I made an exploratory incision and found that the pregnant uterus reached to just above the umbilicus and that it was capped and surrounded by a large multilocular ovarian tumour, a large proportion of the tumour being solid. All attempts to reduce the size of the tumour by repeated tappings failed; the cysts contained thick tenacious fluid and very little could be withdrawn. The incision was extended from the ensiform cartilage to the pubes and after separation of some omental adhesions the tumour, together with the pregnant uterus, was brought outside and the abdominal cavity was packed with large quantities of gauze sterilised by boiling. It was now quite clear that there was no proper pedicle and that to get the tumour away the uterus must be sacrificed. The patient, although taking the anæsthetic well, had a rapid running pulse and showed signs of considerable shock. It was necessary to finish the operation as quickly as possible. A steel director was passed through the neck of the uterus and a piece of stout rubber tubing was passed round the uterus several times below the director and the ends were secured by silk ligature. The ovarian tumour and pregnant uterus were then separated just above the director, the stump of the uterus and attachment of ovarian tumour being secured by this simple measure. Gauze strips were applied round the stump, the abdomen was cleansed, and the abdominal incision was brought together as quickly as possible. The operation was performed at 5 o'clock on the 18th. The patient was sleeping after the chloroform most of the evening and during the night passed pale urine in fair quantities. Milk-and-soda-water was taken at frequent intervals by the mouth and nutrient enemata containing brandy were given every four hours. There is nothing special to record during the next two or three days. The urine was passed involuntarily but in considerable quantity. On the 21st the patient vomited several times and two one-ounce doses of castor oil were successively given without result. On the 22nd the castor oil was repeated without effect, but after extract of cascara sagrada had been given the bowels acted quickly and copiously. During the next week progress was steady. She regained control of the bladder and the amount of albumin in the urine diminished daily. On Feb. 1st the director which transfixed the stump was removed and a day or two later the rubber tubing came away. On the 11th the urine was normal and has since remained free from albumin. With the separation of the slough caused by the tubing there was some local suppuration with a rise of the temperature, and her complete recovery was considerably delayed by fits of mental depression associated with constipation and dyspeptic symptoms. Considering the severity of the operation and the very critical state she was in at the time her recovery was remarkable and largely due to the after-management of the case by Dr. Ward and to most devoted personal nursing on the part of the matron of the hospital.

At the time of the operation no very careful examination of the ureters could be made, but the pressure was clearly most marked in the upper abdomen where the almost solid and very large ovarian tumour was pressing directly backwards against the spine, having been pushed up by the enlargement of the uterus, the sudden enlargement which took place in the few days whilst she was resting in hospital being probably due to some change in the cystic portions of the tumour. When the crisis arose it was a question whether to bring on labour or operate on the tumour, but as we considered that the pressure

[1] A paper read before the Medical Society of London on Jan. 12th, 1903.

symptoms were due to changes in the ovarian tumour and immediate relief was necessary the more radical measure was adopted. We hoped that the tumour could be removed without interference with the uterus, but the necessity for rapidity of operation, the solid character of the tumour, and the nature of its connexions compelled the removal of the uterus. There was practically no pedicle for the ovarian tumour, as it extended deeply between the layers of the broad ligament on the left side and it was impossible to separate this attachment from the uterus. The tumour was also very adherent to the back part of the uterus. It was clear that any intra-peritoneal treatment of the uterine stump was contra-indicated by the necessity for rapid completion of the operation and to save the patient from any loss of blood. There are occasionally cases when the old extra-peritoneal method of treating the uterine stump gives the best chance for the patient, although it prolongs the convalescence. The means adopted were extemporised for the occasion, since no serre-nœud or wire écraseur was available.

The real interest in this case is in the sudden development of anuria and its causation. I hoped to have found some help by looking through the literature on the subject, but cannot find any recorded analogous case. Nearly all the recorded cases of anuria associated with tumour are those of pelvic tumours either pressing on ureters—such as fibroid tumours of the uterus impacted in the pelvis—or else, and much more frequently, involving the ureters by extension of malignant growth from the cervix uteri or the bladder. Scanzoni mentions that ovarian tumour sometimes prevents the passage of urine from the ureters into the bladder and thus causes great distension of the ureters and of the pelvis of the kidneys. He mentions the case of a woman who was tapped 21 times in the course of three years and who died with suppression of urine. After death a cystic sarcoma of the ovary was found of twice the size of an adult head, the lower solid part of which by pressure had produced so great a dilatation of both ureters that the right was two inches and the left one and a half inches in diameter.

Anuria from calculus or direct pressure on the ureters may last many days without causing uræmia. This is the most striking feature. The anuria is rarely quite complete. The urine is rarely albuminous. If the anuria should cease or intermit free secretion is resumed; the urine passed is of low specific gravity and pale in colour. In the non-obstructive forms of suppression death may occur in 24 hours, and if the suppression ceases the return of secretion is gradual and the first quantities of urine secreted are scanty, albuminous, and perhaps bloody. Thrombosis of the renal veins is characterised by almost complete anuria, so that only a few drops of very albuminous urine are obtained by the catheter. Ligature of the renal vein produces albuminuria and anuria. Pressure, therefore, on the renal veins and kidneys would explain the deficiency of secretion and the presence of albumin in the case under consideration and would also account for the presence of albumin for some days after the relief of pressure until the effects of the congestion of the kidneys had passed off. And this view seems much more probable than that of pressure on the ureters. We must, however, consider the possible part played by the associated pregnancy. The anuria in cases of pregnancy practically occurs only under two conditions: (1) where pregnancy is associated with definite acute nephritis; and (2) in eclampsia arising apart from definite organic kidney mischief. In both of these varieties symptoms would be present which were absent in the case under discussion—such as general œdema, headache, vomiting, tremors, or convulsions—and eclampsia is rare at such an early period of pregnancy and is preceded by the premonitory symptoms mentioned. Pressure on the sympathetic plexus could hardly explain the anuria. Traumatism by its influence through the sympathetic system may produce oliguria or anuria, but one cannot conceive it possible for a steadily increasing pressure on the sympathetic system to produce so serious an effect on the action of the kidneys, unless some exciting condition occurred such as the passage of a catheter or the movement of a calculus. We have also no reason to suppose the anuria to have been of a hysterical character. The diminution in the amount of the urine was not accompanied by vomiting or any hysterical manifestations; the urine was albuminous in character and the decrease in amount was at once attended with a serious general disturbance. The combination of a large and almost solid ovarian tumour pressed upon by a pregnant uterus would seem to afford exactly the condition under which direct pressure on the kidneys and vessels might be possible, and considering the effects produced this appears the most likely explanation.

Harley-street, W.

THE COSMETIC VALUE OF PARAFFIN INJECTIONS AFTER ENUCLEATION OF THE EYEBALL.

BY A. MAITLAND RAMSAY, M.D. GLASG.,
SURGEON TO THE OPHTHALMIC INSTITUTION, GLASGOW ROYAL INFIRMARY.

OPHTHALMIC surgeons have suggested many ways of lessening the deformity produced by the removal of an eyeball and giving a more natural appearance to the prothesis. In this communication it is not my purpose either to describe or to criticise these various measures, but simply to record my experience of the use of paraffin for forming a stump on which to fit an artificial eye and to describe briefly my method of procedure.

In *La Clinique Ophthalmologique* of Feb. 25th, 1901, Rohmer described a plan of injecting into the tissues of the orbit two or three weeks after enucleation a sufficient amount of warmed liquid vaseline to form a stump for an artificial eye. As there are, however, on record cases in which after the injection of paraffin into the tissues the patient died from embolism of the pulmonary artery and others in which sight was lost through the formation of an embolism in the central artery of the retina it was subsequently suggested that in order to avoid these risks the paraffin should be injected into the capsule of Tenon after the eyeball had been removed. Having made trial of this method I am, after an experience extending to 22 cases, so satisfied with the cosmetic result and with the free movement of the prothesis that I venture to bring my experiences under the notice of the profession.

The patient having been placed fully under the influence of chloroform the eyelids are separated and kept apart by a spring speculum. The conjunctiva is divided as close as possible to the corneal margin, each rectus muscle is caught up on a strabismus hook and sutured to the overlying conjunctiva with a strand of catgut, the tendons of the recti muscles are cut at their insertion into the sclerotic, and thereafter the operation for the removal of the eyeball is completed in the ordinary manner. If adrenalin chloride solution be freely used the amount of bleeding is very slight and the hæmorrhage is easily stopped by douching the socket with hot sterilised water. The capsule of Tenon is packed with gauze till a strong black silk purse suture has been passed round the conjunctival margin, and then, the packing being removed, the melted paraffin is injected with a carefully sterilised glass syringe, the capsule being opened to its utmost capacity by holding the recti muscles on the stretch by means of the four catgut sutures, and filled to overflowing. The purse suture is then tightened (care being taken to hold the patient's head steady and to relax the tension on the recti muscles) and is securely fixed by a double knot, and the catgut sutures are tied, the superior rectus muscle being approximated to the inferior and the internal to the external. The paraffin is thus induced to mould itself in the socket and to form a stump to which the divided muscles readily attach themselves. The excess is wiped away and, after the conjunctival surface has been carefully bathed with boric solution, a compress and bandage are applied.

This operation is followed by very little inflammatory reaction and as a rule causes the patient hardly any more discomfort than simple enucleation does. The purse suture is kept in place for a fortnight and when it is removed at the end of that time there will be found over the freely moveable paraffin stump a clean non-discharging surface of conjunctiva. A week later an artificial eye can be adjusted, the ordinary shell proving as a rule quite satisfactory, though sometimes better results may be obtained from the use of the form recommended by Snellen. Care needs to be taken that this is not too large, otherwise the paraffin stump will move behind the prothesis. To insure success two points require special attention. First, the operation must be carried out with every precaution against sepsis and so it must not be attempted in cases where the eyeball is in a state of active suppuration, and, secondly, the sutures must hold the conjunctiva in accurate position over the paraffin. It is on the

purse suture that most reliance requires to be placed, and it is therefore very important to see when this is introduced that an equal grip is taken of the conjunctiva all round the free edge and also that too wide an interval is not left between the stitches, but the catgut strands to which the muscles are attached afford great additional security. In one of my recent cases in which the suture holding the internal rectus muscle broke, a little opening made its appearance on the seventh day after the operation opposite the attachment of that muscle and the aperture grew gradually larger and larger until the paraffin escaped.

In my series of 22 cases there have been four failures. Thrice the paraffin has come out through inefficiency of the stitching, but in two of these the conjunctiva was simply drawn together by the catgut holding the muscles without any continuous suture. The purse suture was introduced in my fourth case and since then the only occasion on which the stitches have given way was that referred to above where the suture securing the internal rectus muscle broke. On one occasion, after the enucleation of a suppurating eyeball, pus appeared in the socket and set up so much inflammatory reaction that the stitches were removed and the moulded paraffin was allowed to escape. The paraffin employed is a sterilised preparation melting at 40° C., specially prepared by Rogers of Oxford-street, London. It seems simply to lie in the tissues and gives rise to no irritation, but whether it will at length become absorbed or not time alone can show. Up to the present none of the cases have given any sign of either shrinkage of the stump or impairment of its mobility.

Glasgow.

SUNSTROKE.

BY J. GRAY DUNCANSON, M.B., C.M. GLASG.

THE following brief notes of a fatal case of sunstroke present a clinical and pathological picture which might almost be accepted as typical of an accident, I fear, rather more common in this country than we are led to suppose by the text-books.

The patient was a thick-set muscular man, aged 44 years, 5 feet 5 inches in height and in weight about 12 stones. He had been a heavy drinker for over 24 years, mainly of fourpenny ale and spirits. He had never previously had any severe illness and his family history was good. On June 30th, 1902, after he had been drinking more than usual, he felt ill and on July 2nd he was found to be suffering from a sharp pain just outside the left nipple. His tongue was coated and his skin was moist. On the 4th, as this was evidently due to pleurodynia, a mustard leaf was applied and he was directed to continue taking a mixture composed of sodium salicylate, solution of bismuth, and ammonia. On the 6th he left home at 11.30 A.M. for a walk; he had previously drunk a pint of fourpenny ale and half a quartern of whisky. The day was close and muggy and the sun was shining brightly; the temperature in the shade was 82° F., probably about 115° in the sun. He was observed to be lying under a tree and was spoken to by an acquaintance at 12.30 P.M.; at 1.30 he was found quite unconscious and was taken home in a cab. I saw him at 2.30 when his face was flushed and dusky, his breathing was rapid (45 to the minute), and irregular in rhythm and depth (Cheyne-Stokes). He was unconscious but was restless, continually moving his arms and legs in an aimless manner. The knee reflexes were in abeyance, the teeth were clenched, and the eyes were closed, the pupils being contracted, and the conjunctivæ sensitive to touch. The pulse was 125 to the minute, full, bounding, regular and fairly compressible. As regards the heart, the first sound over the mitral area was rather prolonged and muffled, the aortic second sound being sharp and loud with a snap; there was no murmur. The skin was intensely hot and dry, there being absolutely no sweat either on the face or body; the temperature was not taken. There was a small swelling over the occipital bone on the left side. At 10 P.M. the patient's temperature was 105·5° F., the respirations being 36 and the pulse 96. He had vomited once, bringing up a greenish-yellow fluid, and he had voided urine several times unconsciously. When called upon loudly by name he opened his eyes. A soft murmur, systolic in rhythm, was now heard over the apex of the heart (mitral), and the respirations were shallow but more regular. He was able to swallow when fluid was poured into his mouth. The respiratory murmur on the left side was harsh with moist râles, this condition being less pronounced on the right side. The abdomen was distended. On the 7th, at 10 A.M., the temperature was 105° F., the respirations being 36 and the pulse 96. He had passed a very restless night, the unconsciousness being deeper, the face more dusky, and the right side was observed to be partially paralysed, the right eye discharging muco-purulent fluid. The left arm and left leg were now seldom moved and there was some difficulty in swallowing. The pulse was weaker and softer; it was regular in rhythm but not in quality. The respiration was markedly Cheyne-Stokes in character and there was phlegm in the bronchi and in the trachea. Nourishment was taken fairly well. At 7 P.M. the temperature was 104°, the respirations being 44 and the pulse 100. There was no improvement in the patient's general condition. Respiration had now become rapid and shallow, but was not so irregular. The skin felt cooler, the knees were cold, but the feet were hot. The man was picking at the bedclothes with the right hand. On the 8th the temperature was 103°, the respirations were 44, and the pulse was 106. At 7 A.M. on this day he regained partial consciousness, recognised his wife, and answered "yes" and "no" to questions put to him, but he was not capable of carrying on any intelligent conversation. His breathing was now almost regular and there was less phlegm. The pupils were not contracted and he was able to move the left arm and leg as well as the right. At 2 A.M. he had struggled violently and had tried for the first time to get up. Urine was voided unconsciously and there was an action of the bowels. The evening temperature was 103°, the respirations were 44, and the pulse was 100, weaker and very compressible, the vessel filling and emptying suddenly. The râles over the front of the chest and at the bases were copious, with dulness to percussion. The heart was dilated. The general condition of the patient was worse. On the 9th the patient's temperature was 104°, the respirations were 50, and the pulse was 120. The patient had had a fairly quiet night. His face was dusky, his skin was hot and dry, and his breathing was laboured and rapid. His pulse was regular, soft, and weak; his abdomen was tympanitic, and the dulness at the back part of the lungs had increased in extent. At the left side in front the breathing was tubular, and there were râles all over the right side. The tongue was coated but was not very dry. There were no convulsions, but the cough was troublesome. The patient had all through taken milk, eggs, beef-tea, and ice. He died at 8.30 P.M.

A post-mortem examination was held on the 11th. The body was that of a well-nourished man; rigor mortis had been but transitory, the face, the upper parts of the trunk, and the limbs were already decomposing. There was slight superficial swelling over the occipital bone on the left side. The pericranium was rather adherent and the cranium was hard. The dura mater was tense and it bulged on the removal of the skull cap. The blood-vessels were distended and the sinuses, especially the lateral sinus, were full of dark quite fluid blood; the arteries were somewhat rigid. The sulci of the convolutions about the upper end of the fissure of Rolando were covered with yellowish-coloured, irregular masses of semi-purulent material. These were closely associated with the venous branches and were situated in the subarachnoid space; they were not easily removed but clung tenaciously to the vessels and membranes. This condition was more marked on the right side. The venous stems throughout the brain substance, which was slightly softer than usual, were distinctly distended, and when cut fluid dark blood exuded. No distinct hæmorrhage was discovered, though all other parts of the brain were examined. There was little cerebro-spinal fluid. The lungs were engorged with dark fluid blood and at their bases and in the posterior parts were in the condition of splenisation, dark and non-crepitant. No pleuritic adhesions were found; there was blood in the pleural cavity. The pericardial space contained little fluid. The mediastinum was filled with masses of fat. The heart was laden with fat, but the left side was fairly well supplied with muscular fibre. The right ventricle was dilated and contained fluid blood; the left ventricle was empty and dilated. The whole organ was much enlarged and flabby. The mitral valve was incompetent and the aortic valve held water; the aorta immediately above the cusps of the latter valve was the seat of atheromatous change—there was a calcareous plate at one spot one-third of an inch by one-quarter of an inch in size. The stomach, the great omentum, the mesentery,

and the abdominal walls were laden with fatty masses. The liver was smooth, engorged with blood, and oily, and the gall-bladder was full of greenish-yellow bile. The spleen was dark, enlarged, and friable. The kidneys when stripped of their capsules both displayed several deep cup-shaped depressions, evidently due to old embolic infarctions, the general picture upon section being distorted. The intestines were distended and of a pale colour; the bladder was hypertrophied; and the muscles were pale and exuded little blood.

It is recognised in all hot countries that the back of the neck immediately below the occiput is the important spot to be protected, both in man and beast, from the direct rays of the sun. These solar rays, I feel sure, act in the first place directly, and they do so by causing a disturbance in those vaso-motor centres which are situated in the medulla, affecting the proper discharge of their functions, and specially interfering with the action of the sympathetic system. The blood-vessels of the brain are enormously dilated, also those of the cord and the thoracic and abdominal organs; but those throughout the voluntary muscular system do not appear to be affected. The contracted pupils, absence of sweat, Cheyne-Stokes respiration, and hyperpyrexia, all primary symptoms, point to this conclusion. As suggested by Sambron, it is not impossible that a microbic influence is at work and the early appearance of lepto-meningitis would tend to give support to this theory.

The essentials of treatment are ice, enemata, ice-baths, &c., and if a hose be handy it should be turned on to the patient for a time, as is done on board ship, in order to lower the surface temperature. A small dose of calomel should be given at the outset; then, every hour, and afterwards less frequently, a draught such as this: 20 minims of solution of acetate of ammonium, 15 grains of bromide of potassium, and 20 minims of spirit of nitrous ether in water. I might be inclined in another severe case to try a hypodermic injection of pilocarpine to induce perspiration if I considered the heart would stand it. Then, to improve the flagging circulation, stimulants must be employed and, when the time comes, digitalis—not strychnine.

Shooter's Hill, S.E.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

MEASLES AND CHICKEN-POX OCCURRING SIMULTANEOUSLY.

BY EDWARD J. BLACKETT, M.R.C.S. ENG., L.R.C.P. LOND.,
SURGEON TO THE HOSPITAL OF SS. JOHN AND ELIZABETH, GROVE-END-ROAD, LONDON, N.W.

THE following brief notes of two cases which were under my care in the early autumn of last year are, I think, of some interest owing to their clinical rarity, for as far as I have been able to gather the combination of chicken-pox with measles is certainly uncommon.

I received a message asking me to go to see a boy and I must own that I went with a biased opinion, as the wording of the message was: "Will you come and see my boy who has measles?" Accordingly I fully expected to find a typical case of measles when I got to the house. Before I saw the patient I elicited the fact that he had been home from school about three days and that there had been an outbreak of measles there before he left. I saw the patient, a boy, aged 13 years, in bed. His face was a little flushed and the eyes were slightly—in fact, very slightly—congested; there was no coryza. The temperature was 100° F. There was no sign of a rash on the face, the chest, or the arms. On examining the back I saw three or four typical chicken-pox vesicles but no sign of a measles rash. I asked the patient if there had been any other illness at the school besides measles and he told me that there had been a few cases of chicken-pox and by further questioning I found that he had seen one of the boys with it about ten days before and had also about the same time come in contact with a patient suffering from measles. So I came to the conclusion that the boy had chicken-pox at present, whatever else he might be going to have in the future. On the next day his temperature was still about 100° and there were no fresh vesicles, but a morbilliform rash was making its appearance on his face, chest, and back, being most marked on the back. His younger brother, who had been exposed to the same sources of infection, I saw for the first time. He was listless and complained of headache. His eyes were more congested than were his brother's, but there was no coryza or cough. I could find no signs of measles about him, but, as in the case of his brother, a few chicken-pox vesicles were seen. On the next day the elder brother exhibited a characteristic measles rash and the younger one was showing faint signs of the rash, and on the following day the measles rash was well marked on the younger as well as on the elder brother. Nothing further of interest occurred during the progress of the two cases and both boys were convalescent in a fortnight.

The main point of clinical interest in these cases was, I think, the fact that when the rash of measles appeared it completely masked the chicken-pox vesicles and if I had not seen the cases so early I would have looked upon them as simple cases of measles, but the few vesicles I saw first were undoubtedly those of chicken-pox and the history of the cases made my diagnosis, I think, a correct one.

Bryanston-street, W.

A CASE IN WHICH HOUR-GLASS CONTRACTION OF THE UTERUS IN A CASE OF TWIN BIRTH ARRESTED THE EXPULSION OF THE SECOND FŒTUS.

BY STANLEY J. KERFOOT, M.R.C.S. ENG., L.R.C.P. LOND.

ON Jan. 4th I was sent for to attend a married woman, aged 29 years, a multipara, who thought herself to be from five to six months pregnant. Labour was well advanced, the pains occurring about every ten minutes. On vaginal examination the os uteri was found to be fully dilated and the membranes were presenting, which I ruptured. A hand presented and it was necessary to turn to deliver. External examination then indicated a second fœtus and on vaginal examination a second bag of membranes presented, which I ruptured. After waiting for some time, during which the woman had four pains, and being unable to discover any presentation, I followed up the cord of the first fœtus into an apparently empty uterine cavity. The funis was then found to ascend through a very small constricted opening, into which with difficulty only one finger could be inserted. Gradually, this resistance was overcome and eventually I was able to insert my hand, grasp a foot, and speedily deliver the second fœtus. Both placentæ were then removed without the contraction occurring again. I have never had a similar case in my own practice nor can I find any reference to such a case by any of the authorities.

Bedminster, Bristol.

RÖTHELN AND MEASLES

BY J. REID, M.A., M.D., C.M. ABERD.

THE following brief notes of four cases of possible double infection may be interesting.

CASE 1.—On Dec. 26th, 1902, I was called to see a girl, aged 12 years, on whom a rash had been observed by the mother on the 25th. There were slight bronchial catarrh, inflammation of the tonsils and pillars of the fauces, with the typical rash of measles present everywhere except on the face and head. There was no coryza or inflammation of the eye. The disease ran a mild course, the eruption disappeared on the sixth day, and the lungs remained clear. The throat alone gave some little trouble. Koplik and Filatow spots were absent. On Jan. 4th the skin of the fingers peeled off in large pieces. On the 6th ulcerative stomatitis and cardiac bruit were present. On the 10th there were chorea and pericardial friction sound at the base, with irregular heart and sleeplessness. On the 11th she had improved in every respect and desquamation was complete.

CASE 2.—On Dec. 29th a sister of the above patient, aged 13 years, was brought under my notice for a rash which appeared on the previous day. This was a typical case of measles with Koplik and Filatow spots, coryza, rash on the face, &c. There was as sequela rheumatic pain in one foot,

which had previously been similarly affected. Apart from some slight throat symptoms and bronchial catarrh which were present from the beginning there were no other sequelæ.

CASE 3.—On Dec. 31st another sister, aged two years, presented classic symptoms of measles with Koplik and Filatow spots, slight throat affection, and bronchial catarrh. The child was convalescent on the sixth day. Parotitis was present on the right side on Jan. 6th but it soon disappeared.

CASE 4.—On Jan. 2nd another sister, aged 14 years, who had been taken ill on Dec. 25th and presented some symptoms of septic poisoning, was brought under notice for a rash which appeared on Jan. 1st. Typical measles over the face, body, &c., with Koplik and Filatow spots, was present. There were the throat symptoms already described and a sequela of pneumonia on the 4th.

All had the rheumatic diathesis and in no case was high fever present, but the hearts were weak in every case. The patient in Case 4 had generalised branny desquamation.

It is strange that the patient in Case 3 has been running about quite well since Jan. 6th and the older members of the family—more especially the patient in Case 4 who on the 11th had well-marked rheumatic symptoms—some time previously should be prostrated with various complications. Was the disease measles or was there double infection? The absence of rash of a typical measles form from the face caused me to be specially on the alert for scarlet fever. On the 19th all were convalescent, no chorea or signs of desquamation were to be found, and the pericardial friction sound, the ulcerative stomatitis, and the chorea had left no appreciable signs. All occupied the same bedroom.

Southfields, S.W.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Operative Treatment of Gastric and Duodenal Ulcers.

A MEETING of this society was held on Jan. 27th, Mr. ALFRED WILLETT, the President, being in the chair.

Mr. B. G. A. MOYNIHAN read a paper on the Surgical Treatment of Gastric and Duodenal Ulcers, illustrated by a series of 50 cases, which will be found published at p. 294 of our present issue.

Mr. D'ARCY POWER said that the treatment of perforation of gastric ulcer was passing through the same transition stage as had been seen in the treatment of hernia and intussusception. Because in some cases recovery took place without operation that was no reason for postponing operation. He thought that in all cases in which perforation had taken place operation should be performed at the earliest opportunity. He considered that drainage of the peritoneum was advisable and necessary in some cases and he mentioned a case in which some eight or ten days after operation a subphrenic abscess had formed and the patient had died. He thought that in this case the patient might have been saved had drainage been resorted to. He thought that there was rather a tendency to overfeed the patient, with the result that vomiting was induced. He quite agreed with Mr. Moynihan that pyloroplasty was an unsuitable operation and should be abandoned, as the results were unsatisfactory. He considered that the accurate adjustment of the openings in the stomach and intestine was of great importance since any tension or traction on these parts tended to produce vomiting.

The PRESIDENT said that the paper dealt essentially with two important conditions: (1) perforating gastric ulcer, and he agreed with Mr. Moynihan that the sooner operation was performed the better was the patient's chance of recovery; and (2) chronic ulcer and cicatrisation, giving rise to chronic dyspepsia. The success which had attended operation in these cases was very great, for not only was the immediate result of the operation good but the subsequent results were most satisfactory, for the patients were saved from the chronic invalidism into which they often otherwise drifted. He referred to the certainty of diagnosis and pointed out that in none of the cases recorded had the abdomen been opened without finding some lesion. He thought that simplicity in the operation was especially to be sought for.

Mr. T. C. ENGLISH referred to 40 consecutive cases of gastric and duodenal ulcers which had been operated on in St. George's Hospital. In 21 recovery had taken place. The latency of symptoms had been a marked feature in some cases, and he mentioned two cases in which the symptoms were very slight but a perforation had been found. He referred also to other cases in which more marked symptoms had been present and in which on opening the abdomen no ulcer had been found.

Dr E. P. PATON referred to the question of drainage and asked what objection there was to local drainage. He considered that its use tended to prevent the occurrence of a subphrenic abscess.

Dr. G. NEWTON PITT doubted whether anæmia was less marked in cases of acute gastric ulcer than in cases of chronic ulcer. He asked if Mr. Moynihan had any evidence that a hard, chronic, gastric ulcer healed after a gastro-enterostomy. He thought that gastric ulcers were not so rarely solitary as Mr. Moynihan seemed to suppose.

Mr. MOYNIHAN, in reply, said that in any case in which there was doubt as to perforation of a gastric ulcer operation should be performed. With regard to the question of drainage he said that it was unnecessary when the peritoneum was properly cleansed. Subphrenic abscess arose from inadequate cleansing of the peritoneum. He thought that fluid should be given early and frequently after operation. The anæmia which occurred in acute ulcer was never so profound as that seen in chronic ulcer and was more transient. He said that in his experience chronic ulcers of the stomach were never solitary and he had never seen a duodenal ulcer without a gastric ulcer being present. Practically speaking, he would say that chronic ulcers were never solitary.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Jan. 26th, Mr. C. A. BALLANCE, one of the Vice-Presidents, being in the chair.

Mr. C. R. B. KEETLEY exhibited a case of Undescended Testis after Operation. The patient was one of two who had been exhibited nine years ago as an example of what was at that date a new mode of operating for undescended testis.[1] At that time the testis of this patient was markedly atrophied. Some of the speakers had suggested its removal and it was further suggested that the patient should be exhibited again in order to see if the organ would grow after having been brought into its more normal position at the root of the scrotum. The patient was in the habit of playing football and cricket but had never incurred any injury to the testicle and both Mr. Keetley and the patient were satisfied that it had notably enlarged. The patient, moreover, had suffered no pain or inconvenience whatever.

Dr. H. CAMPBELL POPE exhibited a case of Venous and Lymphatic Nævus of both Cheeks in a boy, aged 14 years. The appearance presented on the cheeks of this patient had come on suddenly after an attack of scarlet fever about nine years before. The cheeks were very swollen and thickened, of a bluish tint, and there was a ring of pigmentation under each eye. The swelling of the cheeks was always greater during cold weather.—Mr. J. HUTCHINSON, jun., referred to a case of the same kind affecting one side of the face in which the superficial lymphatics evidently possessed communications with the deeper lymphatics.—Mr. T. H. OPENSHAW referred to a case which he had treated beneficially by actual cautery.—Mr. BALLANCE regarded the case as belonging to the same category as hygroma and amenable to the same treatment.

Mr. OPENSHAW exhibited three cases of Congenital Dislocation of the Hip-joint. The first case, that of a female child, aged seven years, had been treated by the manipulative method of Lorenz. The second case, that of a female child, aged eight years, had been treated by the open method of Hoffa. The third case was that of a girl, aged 13 years, presenting dislocation of both hips, who had not yet been submitted to treatment; the prospect of improvement, Mr. Openshaw remarked, was not very hopeful. He believed in general that good results could be obtained by the manipulative method of Lorenz in children up to the age of five years, but after that age he expressed a preference for the "open" method of Hoffa.

[1] THE LANCET, April 21st, 1894, p. 1008.

Mr. OPENSHAW also exhibited a child, aged six months, presenting congenital absence of the lower two-thirds of the tibia, evidently due to an intra-uterine fracture, the mother having fallen over the back of a chair during pregnancy.—The relative advantages of the manipulative and the "open" methods of operating on cases of congenital dislocation of the hip-joint were discussed by Mr. KEETLEY and Mr. BALLANCE, both of whom expressed a general preference for the latter.—Mr. OPENSHAW replied.

Mr. JAMES SHERREN exhibited a case of Ankylosis of the Hip following Gonorrhœal Arthritis occurring in a man, aged 20 years. 14 days before the onset of the pain in the joint he had had an attack of urethritis. The right hip was fixed in extension and there were marked wasting of the thigh and slight wasting of the muscles of the calf.

Mr. SHERREN also exhibited a case of Secondary Syphilitic Synovitis of the Elbows. The patient, a man, aged 24 years, had contracted a venereal sore six months previously and about a month previously he noticed that his left elbow had become swollen and painful and a week later the right became similarly affected. Both elbow-joints were now held in a flexed position, all movements being resisted and painful, and there was a considerable amount of effusion into both joint cavities.

Dr. F. J. POYNTON exhibited a case of Atavism occurring in a child, aged three years, who had been admitted to the Hospital for Sick Children, Great Ormond-street, under the care of Dr. F. G. Penrose for inability to walk properly. When first set down on his feet he stood erect, but when he commenced to walk he crouched and assumed a posture like that of a chimpanzee. The whole body was bent forward and the head was bent, the chin pointing to the right. The hands were held in front and the upper extremities were bent at the wrists and elbow. The hips and knees were flexed and the feet were turned in, the pressure coming upon their outer borders. The crouching attitude became more marked as the child became tired.—The case was discussed by Mr. E. MUIRHEAD LITTLE, Dr. EDMUND CAUTLEY, and Dr. A. F. VOELCKER.

Mr. HUTCHINSON, jun., exhibited a case of Macrodactylism in a man, aged 54 years. The digits involved were the right thumb and index finger, the latter being the larger. All the bones of the right index finger were the site of rounded knobs and a skiagram showed that the joints were almost completely ankylosed. The soft tissues were also hypertrophied. The hand, in spite of its ungainly digits, was useful and the patient had worked hard as a cooper. The other hand and both feet were of normal size. The condition had existed since birth. The patient had come under care for an œsophageal stricture.

Dr. H. D. ROLLESTON showed a man, aged 44 years, suffering from Aortic Disease and presenting a musical diastolic aortic murmur resembling that heard in cases of ruptured valve. There was, however, no other reason to suspect rupture of a valve in this case and Dr. Rolleston did not regard it as an instance of that lesion. The patient had not had syphilis or rheumatism but had a laborious occupation.

Dr. CYRIL OGLE (introduced by Dr. Rolleston) exhibited a case of Symmetrical Gangrene of the Peripheral Ends of the Fingers of doubtful origin.

CLINICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Jan. 23rd, Mr. HOWARD MARSH, the President, being in the chair.

Dr. T. D. SAVILL exhibited a case of Facial Hemiatrophy (Morphœa or Localised Scleroderma of the Face). The patient was a man, aged 50 years. In 1880 he had a severe blow on the top of the head and thereafter suffered from neuralgic pains in the vertex and face, sometimes of great severity, until 1895, when they subsided under treatment. In 1885 or 1886 he first noticed that the hair of the left side of the scalp and left eyebrow was coming off and that the face on the left side was becoming wasted. The wasting of the face at first gradually increased, but it had remained stationary for some years. On the left side of the face the whole of the skin was thin, shiny, and smooth, and the subcutaneous tissue was considerably atrophied. The hair was almost absent from the left anterior quarter of the scalp and was also wanting in the inner half of the left eyebrow. The temporal and masseter muscles were apparently atrophied but the other facial muscles did not seem to be wasted. The distribution of the facial atrophy corresponded roughly to the cutaneous distribution of the left fifth cranial nerve. There were three other patches of atrophied skin upon the body, one upon the middle of the back of about the size of the hand which presented a few dilated venules characteristic of morphœa, and in this position there appeared to be a slight tendency to excess of pigment. Another patch of atrophied skin might be seen behind the right ear and a third over the outer side of the left knee. These, like the facial atrophy, caused the patient no unpleasant sensations. Microscopic sections of the skin of the atrophied side of the face and of the patch on the back were shown; also sections from another case of morphœa and of healthy skin for comparison.—Sir DYCE DUCKWORTH agreed with Dr. Savill in regarding cases such as the one before the society as identical with morphœa and referred to a paper on the subject which he (Sir Dyce Duckworth) had communicated to the *Edinburgh Medical Journal* in 1883,[1] dealing with different forms of atrophy. Facial hemiatrophy represented the most extreme form of atrophy, not only the skin but the muscles and even the bones being sometimes involved. No one could doubt that these lesions were of nerve origin, and in Dr. Savill's case the fifth nerve and the Gasserian ganglion had probably been damaged by the accident. All of these atrophic skin lesions were, in his view, of neuro-trophic origin, and he referred to cases in which a fall upon the head had been followed by rapid and total loss of hair from all parts of the body.

Dr. SEYMOUR TAYLOR exhibited a case of Ruptured Aortic Valve. The patient, a "hammerman" by occupation, aged 50 years, was admitted to the West London Hospital on Oct. 16th, 1902, complaining of giddiness, præcordial pain, and dyspnœa which had come on somewhat suddenly in July, 1902, after a long day's heavy work. On admission he was found to have a loud aortic obstructive murmur and a louder diastolic murmur. The latter was musical and was so loud that it could be distinctly heard at a distance of two inches from the chest, and with the aid of the stethoscope it could be heard all over the thorax, in the abdomen as low as the umbilicus, and down the arm. The left ventricle was hypertrophied and probably dilated. The diagnosis of ruptured valve was made on the following grounds—viz.: (1) A history of syphilis; (2) the sudden oncoming of urgent symptoms; (3) the patient's occupation; (4) the musical diastolic murmur; (5) the presence of marked diastolic thrill; and (6) the absence of any other definite signs of aneurysm.—Dr. A. MORISON discussed the diagnosis and regarded the case as one of aortic regurgitation in which loss of compensation had occurred rather than as a case of ruptured aortic valve. The latter was a very rare condition in which the symptoms supervened very suddenly and were continuous and cumulative. He referred to a case which he had observed in which the patient after sudden and violent exertion took to bed and died six or eight months later, ruptured aortic valve being verified at the necropsy.—Dr. H. A. CALEY agreed with the preceding speaker and thought that the symptoms in Dr. Taylor's case might be accounted for by a sudden loss of compensation. A musical murmur and a marked diastolic thrill were not, he thought, altogether trustworthy as a means of diagnosing ruptured aortic valve.—Dr. S. VERE PEARSON referred to a case which he had observed at St. George's Hospital resembling Dr. Taylor's case which proved at the post-mortem examination to be one of dilated aortic orifice with failure of compensation.—Dr. A. E. GARROD discussed the significance of the systolic murmur in the case.—Dr. TAYLOR, in replying, admitted that the diagnosis was open to doubt, but emphasised the history of syphilis, the occupation of the patient, and the loudness of the musical murmur in support of his view.

Mr. STEPHEN PAGET exhibited a case of Removal of the Scapula of a boy, aged nine years. The patient was a thin and delicate-looking but healthy boy. Swelling of the bone was first noticed one month before; there was no pain or history of injury. A hard nodular rounded mass with a broad base sprang from the right supraspinous fossa and passed forwards beneath the clavicle. No signs of pressure on the vessels and nerves of the arm and no enlarged glands were present. On April 30th, 1902, the scapula was excised and the growth found to be cartilaginous. The patient made a good recovery and the movements of the arm were good.

[1] Edinburgh Medical Journal, January, 1883, p. 616.

The sutures were removed on May 12th and the patient was discharged from hospital on the 21st, wearing a support to prevent the arm from dropping.—The PRESIDENT regarded the case as an exhibition of the wonderful compensatory powers of the human body and as a lesson in conservative surgery.—Mr. PAGET, in replying, explained why he had removed the whole instead of only a part of the scapula.

Dr. H. D. ROLLESTON exhibited a case of Charcot's Disease of the Knee-joint and Spontaneous Fracture of the Tibia in the same limb. The patient was a widow, 46 years of age, who had had seven miscarriages. She had suffered from "lightning pains" eight years, and visceral crises six years, previously. There had been a sudden onset of painless swelling of the left knee after a long walk five years before, and three years before, while going upstairs, the left tibia had fractured painlessly. The menopause came on a year previously and was accompanied by incontinence of urine. Altered character of voice was noticed 11 months previously. On Dec. 3rd, 1902, after an attack of diarrhœa lasting for three days, she lost power in the right leg. In addition to arthropathy of the left knee the left tibia, about the middle, showed a projection the result of the old fracture. There were also paresis of the right lower extremity, complete paralysis of the left third nerve, and altered speech. She had had occasional choking fits and was subject to attacks during which she felt faint. The optic discs were pale and the pupils were contracted and did not react to light or accommodation. —Mr. A. A. BOWLBY remarked on the spontaneous fracture of the tibia and referred to two cases of tabes dorsalis in which similar fractures had occurred. One was that of a man whose leading symptom was incontinence of urine and another was that of a woman who successively fractured one of the bones in all four of her extremities. In Mr. Bowlby's experience these fractures united very well, though this did not correspond with the opinion generally held.—Mr. J. R. LUNN concurred in the view that tabetic fractures readily united and emphasised the point that the patients suffered little or no pain at the time of the fracture.—Dr. ROLLESTON, in replying, remarked that the paralysis of the right leg, which was evidently an upper-neuron paralysis, was possibly of syphilitic origin.

Mr. J. R. LUNN exhibited a case of Traumatic Stricture of the Œsophagus treated by Gastrostomy. The patient, a seaman, aged 63 years, had always enjoyed good health until 1898, when he met with an accident whilst at sea. Two years afterwards (in 1900) he began to lose weight and experienced some difficulty in swallowing and was able to take liquid food only. He went to the London Hospital and Mr. C. W. Mansell Moullin performed gastrostomy. He was discharged four weeks afterwards, when he returned to sea, feeding himself by the abdominal opening into the stomach. About 15 months after the operation the wound healed. The patient went into hospital in Boston, U.S.A., and had it reopened. In 1902 the wound began to heal again and as he could not pass the tube he tried to dilate the orifice with a piece of wood, which caused pain and bleeding. At Havre, in September, 1902, a surgeon trimmed the edges of the wound in the abdomen and stitched them together. When he arrived at the St. Marylebone Infirmary in October, 1902, the stitches were removed and the wound was healed. Since his admission he had gained in weight and had been able to take solid food, though he had occasionally had some dysphagia and he still had some obstruction (spasmodic) of the œsophagus. About seven inches from the teeth there was some doubtful thickening around the larynx. The patient seemed very well in health with the exception of a ventral hernia which occasionally caused him some pain and for which he wore an abdominal support.—Mr. BOWLBY commented on the length of time—two years—during which the patient had lived since the operation.—The PRESIDENT thought that stricture of the gullet might quite possibly be due to the injury, and he referred to a case in which the left lung had been wrenched off from its root during an accident.

Dr. F. PARKES WEBER exhibited a case of Persistent Slight Jaundice of four years' duration in a girl, aged 18½ years, without obvious alteration in size of the liver or spleen and without marked impairment of the general health. The patient was the youngest child of Polish Jewish parents. The patient's mother, who was living and healthy, had had 13 children altogether (of whom eight died early) and two miscarriages. The patient had been under observation since the beginning of November, 1902, and about that time there was slight irregular fever, which passed off in little more than a week. The fæces had generally been well coloured, though sometimes pale. The urine, which was free from albumin and sugar, had varied in colour but was generally not very dark; sometimes a slight Gmelin's reaction had been obtained. The serum obtained from a blister gave a Gmelin's reaction. Iodide of potassium in five-grain doses three times daily was given during nine days but was discontinued owing to a pustular eruption. Occlusion of one or more of the smaller hepatic ducts by a process of obliterative cholangitis was suggested by Dr. Weber as a possible explanation of the clinical features of the case.—Sir DYCE DUCKWORTH suggested that the jaundice might be of syphilitic origin.—Dr. ROLLESTON agreed with Dr. Weber that a condition of chronic cholangitis might exist in this case akin to chronic bronchitis.—Dr. WEBER, in reply, stated that urobilin had not been detected by the spectroscopic examination of the urine.

Mr. LEONARD S. DUDGEON exhibited a case of Tabes Dorsalis in which the chief points of interest were—(1) a tabetic arthritis affecting the astragalo-scaphoid joint; (2) atrophy of the small muscles of the right hand; and (3) paralysis of the first nerve.

Dr. PERCY KIDD exhibited a case of Pneumothorax in a child, aged 23 months, resulting in recovery. The child was admitted into the London Hospital on Sept. 22nd, 1902, with a history of cough and wasting and with all the signs of pneumothorax on the right side. No tubercle bacilli were found. The signs of pneumothorax gradually disappeared, but in November a localised empyema was operated on. The patient made a good recovery and was now steadily gaining in weight.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Exhibition of Cases.—Arrhénal.—Rectal Growths.—Retinal Hæmorrhages.

THE fifth ordinary meeting of this society was held on Jan. 21st, Sir THOMAS R. FRASER, F.R.S., the President, being in the chair.

Before commencing the business of the evening, the PRESIDENT asked the members to agree in offering the hearty congratulations of the society to Sir William Turner on account of the high and unprecedented honour which had been conferred upon him in his election to the principalship of the University of Edinburgh. This was unanimously agreed to.

Mr. H. A. THOMSON showed a case of Successful Treatment of an Ununited Fracture of the Tibia and Fibula in which the fracture had been induced to unite by means of a rigid metal plate and screws which were imbedded in the tissues for eight months.

Mr. THOMSON also showed (for Dr. NORMAN WALKER) a case of a large Ulcerating Surface over the Site of the Left Breast in a woman, aged 45 years, which had been treated by x rays during a period of 75 minutes by successive sittings of five minutes each. Marked improvement ensued.

Mr. H. J. STILES showed a boy in whom he had successfully Transplanted the Ureters into the Rectum for Extroversion of the Bladder. The boy was comfortable and could hold his urine for three hours.

Mr. C. W. CATHCART showed a patient after operation for Suppuration in the Frontal Sinuses.

The PRESIDENT read a paper entitled "The Inefficiency of the Di-sodic-methyl-arsenate (Arrhénal) as a Therapeutic Agent." He said that in a former paper dealing with the recently introduced and much lauded cacodylates he had stated the proposition that the therapeutic effects of arsenic were caused by its pharmacological action and that if arsenic were so united with other bodies as to be incapable of producing any pharmacological action or of inducing in excessive quantities the toxic effects that represented an extreme degree of pharmacological action, it could no longer be capable of producing the therapeutic effects in disease which were the recognised effects of arsenic. If, therefore, any compound of arsenic such as the methyl-arsenates or cacodylates were found to be so inert that they might be given without producing, in doses considerably above the minimum-lethal of the ordinary active compounds of arsenic, any symptoms of the action of arsenic, it must be because the arsenic had become emasculated and inert and probably because

in the inert compound the arsenic had formed so firm and stable a union with other ingredients of the compound that no dissociating influence to which it was subjected in the body was able to set free an active arsenic compound or ion from the combination. In the case of the cacodylates he had shown that enormous quantities might be taken by the human being without producing any toxic effect and that several diseases which were benefited by the administration of the older preparations of arsenic were quite unaffected by the cacodylates which passed through the body and were eliminated in such stable combination with organic bodies that they failed to react to the usual tests for arsenates and failed to yield arsenium when subjected to Marsh's process. Even M. Danlos, who claimed to have been the first to employ cacodylates in medicine, had stated that already they had failed to fulfil the enthusiastic anticipations which were originated by Gautier and Renaut, and that this was especially so as regards the treatment of anæmia and skin diseases. Further experience of cacodylates had also shown that when given in large doses by the stomach they gave rise often to inconvenient effects—e.g., alliaceous odour of the breath and skin, gastric disorder, and even congestion of the kidneys—which had been attributed to cacodylic oxide or binoxide being generated in certain conditions. To obviate these Gautier has recently introduced another organic compound of arsenic—di-sodic-methyl-arsenate ($AsCH_3O_3Na_2{,}2H_2O$)—as a substitute for the cacodylates or di-methyl-arsenates. He claimed for this salt that while it was non-toxic it had the therapeutic potency of arsenic and that it might be used not only by subcutaneous or intramuscular injection, but also by stomach administration, without producing inconvenience or disorder due to the formation of minute quantities of cacodyl-oxide or binoxide. To prevent confusion Gautier had introduced the name "arrhénal" for this salt. It was a colourless crystalline salt and gave in solution when treated by nitrate of silver a white and not a yellow or brick-red precipitate, thus failing to produce the reaction of an arsenite or arsenate. Although it contained 34·5 per cent. of its weight of arsenium, representing 45·5 per cent. of arsenious acid, it was given in doses varying from 0·2 to 0·025 gramme daily (from three grains to 0·38 grain). It was claimed to have produced good results in tuberculosis, bronchitis, chorea, syphilis, anæmia, pernicious anæmia, adenitis, leukæmia, influenza, and vomiting of pregnancy, and it was stated to be the most potent of all remedies for malaria. The enthusiastic praise of this recently introduced organic preparation of so called latent arsenic and the diversity of results in its therapeutic applications appeared to the President to justify an examination similar to that to which he had previously subjected the cacodylates. In view of the evidence brought forward regarding the position as remedial substances of the closely allied cacodylates, he thought that it was sufficient to adduce only two cases in illustration of the clinical experience with this substance. Case 1.—The patient was a widow, aged 60 years, who had suffered during two months from chronic eczema widely distributed over the whole body. The urine was of low specific gravity and contained a small amount of albumin with a few hyaline and granular casts. On May 27th, while local applications were continued treatment with di-sodic-methyl-arsenate was begun. For the first three days one grain in solution was given twice daily, then thrice daily for the next three days; two grains were given twice daily for 14 days, and finally, three grains were given thrice daily for 23 days, or until July 9th—in all for a period of 43 days. Altogether 207 grains of arrhénal were received by the patient, representing 70·5 grains of arsenium or 93·06 grains of arsenious acid, or 10,237 minims of liquor arsenicalis. During these 43 days the patient received a quantity of arsenium sufficient to kill about 45 adult human beings, and on several days a quantity sufficient to kill two adult human beings, if the arsenium had been in the form of any of the older compounds. The maximum daily quantity given was nine grains which represented 3·06 grains of arsenium, 4·04 grains of arsenious acid, or 444 minims of liquor arsenicalis. This large introduction of arsenic did not produce any toxic symptoms. The appetite and intestinal functions were not affected, but, contrary to the claim made by Gautier and others, a slight alliaceous odour began to be observed in the breath while the patient was receiving two grains twice daily. As to the therapeutic result, no appreciable influence was noticed. After ceasing the administration of arrhénal, the patient was first treated with colchicum and iodide of potassium and latterly with thyroid gland, but they also proved unsuccessful and marked improvement was effected only by local applications. Case 2 was a strongly marked case of chorea in a girl, aged 13 years. She had suffered from the disease for four weeks and had latterly been so ill that confinement in bed was required. The pulse-rate was slightly irregular and distinct presystolic and systolic bruits were present. Examination of the blood showed that anæmia was not present. On May 27th, while the choreic movements were present in all their severity, treatment by administration by the mouth of di-sodic-methyl-arsenate was commenced. She received from May 27th to 30th one grain twice daily, from May 30th to June 2nd one grain thrice daily, from June 2nd to 7th two grains twice daily, from June 7th to 15th two grains thrice daily, and from June 15th to 17th three grains thrice daily. On June 2nd, while she was receiving two grains twice daily, the breath exhibited a slight alliaceous odour and this had become very distinct on the 7th when she was getting two grains thrice daily. Throughout the treatment by arrhénal no symptom of true arsenical action was observed, such as a silvery fur on the tongue, œdema of the conjunctiva or eyelids, or gastric disorder, nor was any appreciable remedial effect produced. Indeed, on June 17th, the last day of the treatment by arrhénal, it was noted that the patient was more restless than usual and that, even during the night, in contrast with her previous condition, she was wakeful and moved about restlessly. During these 21 days the total amount of arsenium received in the form of arrhénal was 101 grains, representing 45·4 grains of arsenious acid, and the minimal and maximal daily quantities respectively were 0·68 grain of arsenium, representing 0·89 grain of arsenious acid, and 3·06 grains of arsenium, representing 4·04 grains of arsenious acid. At the end of the third day after the administration had ceased the garlic odour had disappeared from the breath. In order to exhibit more clearly the therapeutic value of an active arsenical preparation in the treatment of chorea the patient was treated from June 20th to 25th with salicylate of sodium and from June 25th to July 4th with bromide of potassium. Only a slight amelioration of the symptoms occurred, sufficient to present a favourable contrast with the absolutely negative effects of treatment with arrhénal. Liquor arsenicalis was then administered in doses of three minims thrice daily and gradually increased to five, eight, 12, 15, and on August 28th to 20 minims. On July 15th, when five-minim doses were being taken, the movements had become lessened and the patient succeeded in threading a needle, though with difficulty. On July 19th the patient was nearly motionless when at rest, but under voluntary efforts some choreic movements occurred in the fingers and feet. She remained in this state of slight choreic disturbance until the dose of liquor arsenicalis had been increased to 20 minims thrice daily when she practially resumed her normal condition. Though taking the large daily quantities of from 30 to 60 minims, representing from 0·27 to 0·54 grain of arsenious acid, for three weeks the patient exhibited no symptoms of toxic action. In both of these cases arrhénal not only failed to produce any therapeutic effect, but even failed to produce evidence of the possession of any action, even when enormous doses were being taken. Experiments were performed which showed that arsenic when given in the form of di-sodic-methyl-arsenate was abundantly eliminated, and therefore that it did not appreciably tend to unite itself to the tissues and thus accumulate in the body, as was shown by its rapid disappearance from the urine after the cessation of administration. A favourable experience of the subcutaneous injection of arsenate of sodium would lead one to recommend the adoption of this method of administration. A male patient, aged 33 years, who during ten years had suffered from chorea with frequent acute relapses was treated by this method Sterilised injections were made daily for nearly five weeks, commencing with three minims and attaining gradually to the large dose of 90 minims. Improvement was soon observed and the symptoms had practically disappeared in three weeks. The general results of the observations demonstrated that the much praised di-sodic-methyl-arsenate was practically inert and incapable of producing the well-defined pharmacological action and toxic effects of the arsenic ion.

Mr. F. M. CAIRD read a communication on Excision of Carcinoma of the Rectum and the Treatment of Inoperable Carcinoma of the Sigmoid Flexure. He stated that at the present time it was sad to know that the pessimistic view "that nothing could be done" in cases of rectal carcinoma

was still too commonly held by some who should know better and many patients were allowed to drift on in a hopeless fashion until a fatal obstruction threatened and colotomy was required in most disadvantageous circumstances. It was, however, well known that in this region of the body carcinoma frequently ran a comparatively slow course and this constituted a strong argument in favour of early operative interference with a hopeful prospect of cure. In later cases the advantages of a palliative colostomy would depend on the peculiarities of each case, the general state of health, the pain, the amount of hæmorrhage or irritation of the bowel, the mental attitude, and the possibilities of future care and nursing. Operations for the removal of rectal neoplasms were carried out on the same principles which guided them at higher levels in the intestinal tract. Too much preparation in the way of purgation and enemata ought not to be made. A preliminary colotomy possessed little advantage, if any, and a mesial laparotomy was not essential for the mere sake of ascertaining how far up the growth extended when this could not be ascertained from the rectum, for Mr. Caird believed that the upper limit of rectal carcinoma was always accessible from below. The bowel should be thoroughly washed out on the operation table while the patient was anæsthetised and boric or normal salt solution would effect all that was required. Sepsis formed the chief danger in these operations, hence during the preliminary operations the surgeon should wear rubber gloves. Gauze was then packed into the rectum below the tumour and the gloves were removed. The whole field of operation was then thoroughly purified. It was advisable to free the gut from the connective tissue of the sacral curvature and to open the peritoneal cavity early. This defined their position better, permitted them to detach the rectum from the recto-vesical pouch, and enabled them to follow the rectum from above downwards. By slipping a wisp of gauze around the rectum above the level of the neoplasm the gut was pulled gently down and its surface covered with visceral peritoneum projected into the wound. The divided parietal layer might be fixed by a few sutures to the prolapsed portion so as to shut off the peritoneal cavity; gauze was now packed into the wound and the gut was clamped well above and below the tumour and removed. To restore the canal end-to-end sutures might be employed. A flatus-tube was now inserted from the anus well beyond the point of union and the displaced bone, if any, was replaced and wired, the wound was practically closed and carefully stuffed with iodoform gauze, and a large dressing was applied over all. It was hoped in this fashion to get primary healing of the bowel while the greater part of the external wound must close by granulation. If it be found that the ends of the divided bowel only met with difficulty an attempt should be made to unite the anterior part of the lumen at least. This greatly tended to prevent fæcal extravasation into the tissue and the resulting posterior fistulous tract gradually healed. Where a junction was impossible the patient might be left with a permanent artificial anus in the sacral region. Of ten patients so treated all recovered from the operation. The female cases were mainly parasacral and no bone was removed, as was required in the male. In five patients the gut could not be united and a sacral anus was established which gave no inconvenience. Of these, four were males and one was a female. In four females, on the other hand, the perfect result was obtained. In only one instance was primary union of the bowel obtained. There might be local recurrence and the stricture after operation simulated this. As regards the after-history, one man, aged 36 years, rapidly succumbed within six months, three died within a year, and in none of these a normal anus was established. The others were alive and well, one four months, one ten months, three one year, one 18 months, and one five years, respectively, after operation. Of 40 cases of rectal carcinoma, 24 occurred in males and 16 in females. In one case a small rectal neoplasm was removed at the anal orifice and a primary growth which eventually gave rise to obstruction and necessitated colostomy was not detected. It was necessary carefully to guard against the risk of iodoform poisoning and be prepared to recognise and to treat it should occasion arise. A solitary instance of lysol poisoning was also observed, alarming but of transient duration.

Dr. R. A. FLEMING read a paper on Retinal Hæmorrhages as a Diagnostic Feature in Fracture of the Base of the Skull and in Subarachnoid Hæmorrhage. After referring to the structure of the optic nerve and papilla and the arterial supply of the nerve, papilla, and retina Dr. Fleming drew special attention to the subarachnoid space, the sinus subarachnoideus basalis, and the continuation of the arachnoid membrane into the intersheath space of the optic nerve. He pointed out that the sinus basalis just referred to was relatively a large subarachnoid cistern or space and that there was no median raphé excepting the stalk of the pituitary body, which must act as a barrier in the anterior part of the space. Dr. Fleming found from post-mortem experience that where there was a *sudden* hæmorrhagic extravasation into the subarachnoid space the intersheath space of the nerve contained blood and that in a large percentage of these cases if the subarachnoid hæmorrhage was unilateral the retinal hæmorrhages were present only, or at least mainly, on the affected side. In 12 cases of fracture of the skull—11 of these being fracture of the base—five cases showed after death marked subarachnoid hæmorrhage on one side of the brain and retinal hæmorrhages present and confined to the affected side only. In two cases the subarachnoid hæmorrhage was more markedly bilateral and the retinal hæmorrhages were numerous and present in both eyes. In the remaining five cases, although there was fracture of the base there had been —with one exception—less marked subarachnoid hæmorrhage and no retinal hæmorrhages were found in either eye. Meningitis was noted in two of these cases and life had been, with the one exception to be mentioned immediately, more prolonged than in the first seven cases of fracture noted above. The exceptional case was one in which there was a very extensive fracture and an enormous extravasation of blood posteriorly. There was much laceration of the temporo-sphenoidal lobes, &c., and probably the intersheath spaces did not contain much blood because they had been partially occluded by pressure upon the optic nerves just distal to the chiasma. Dr. Fleming referred lastly to four instances of subarachnoid hæmorrhage in cases which were not fracture. Three of these were hæmorrhages into the neighbourhood of the internal capsule on one side of the brain, but in all three the hæmorrhage had ruptured into the lateral ventricle or externally. In two of these three cases there was some subarachnoid hæmorrhage on one side of the brain and there were retinal hæmorrhages in the corresponding eye, while in the other case the effusion was less marked, being rather blood-stained than pure blood, and there were no retinal hæmorrhages at all. In the last or fourth case of this group there had been a positive hæmorrhage which had ruptured externally and there were in this case bilateral retinal hæmorrhages. Dr. Fleming illustrated his remarks with a lantern and microscopic demonstration.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on Jan. 14th, Dr. James Ritchie, the President, being in the chair.—Professor A. R. Simpson showed an Ovarian Tumour removed from a girl, aged 17 years. The fluid contained pneumococci and streptococci the cyst itself being lined by a croupous-looking membrane; the tumour was extensively adherent. He also exhibited a Uterus with a Fibroid Tumour.—Dr. J. Haig Ferguson showed (1) an Extra-uterine Gestation complicated by Ovarian Abscess; and (2) a Tubal Gestation Sac.—Dr. J. M. Munro Kerr showed (1) an Extra-uterine Gestation; and (2) an Ovary and Tube removed from a case of abdominal hæmorrhage. The ovary showed a Graäfian follicle with blood clot protruding which had been theevident source of the bleeding. Microscopical examination would show whether it was a case of ovarian pregnancy or simple hæmorrhage from a Graäfian follicle. The uterus was probably gravid.—Dr. Munro Kerr read a paper on a New Method of Estimating the Relative Sizes of the Fœtal Head and Maternal Pelvis. Dr. Barbour, he said, once remarked that the fœtal head was the best pelvimeter and this aphorism was true in its completeness. It was the fact that neither by the most careful manual examination nor by the most modern pelvimeter could the exact degree of pelvic deformity be appreciated. Dr. Munro Kerr had found a difference of half an inch between the estimated conjugate diameter during life and that obtained by post-mortem measurement both in his own cases and in those of medical men with much longer experience. The attempts to estimate the size of the fœtal head in utero were most disappointing. The abdominal and uterine walls were often so resistant as to prevent accurate measurement of the part of the head to which the callipers were being applied and it was seldom that a transverse measurement of the head could be obtained. To Müller

and Pinard was due the credit of having first described two methods for testing the relative sizes of the fœtal head and maternal pelvis. Müller's method was wholly internal. An assistant with both hands pressed the fœtal head into the pelvic inlet and the obstetrician's fingers in the vagina palpated out the engaging part and its relative size to the maternal pelvis. Pinard's estimation was made by purely external manipulations. The fingers of the hand which estimated the engagement of the head were pressed over the brim at the symphysis pubis while with the other hand the fœtal head was pressed into the pelvis. Dr. Munro Kerr's method was to some extent a combination of these two methods. With the right hand he took a Pawlik grip of the fœtal head and pressed it into the pelvic inlet. Two fingers of the left hand were passed into the vagina and these estimated the consistency and manner of engagement of the head in relation to the nature and extent of the pelvic deformity. Further information was also obtained by utilising the thumb, which was passed outside along the brim of the pelvis, and this estimated the degree of over-lapping. By this bimanual method, also, the head was moved from side to side at the brim and the engagement of the occiput or sinciput was tested. The amount of difficulty the head would encounter in passing the brim could thus be appreciated, and it could be decided whether forceps, symphysiotomy, or Cæsarean section should be chosen. In carrying out this examination it was better to stand at the patient's side, not in front, and it was an advantage to have the patient under an anæsthetic. A breech case could be converted into a cranial presentation by external version for the purposes of this examination.—The paper was discussed by Professor Simpson, Dr. Haig Ferguson, Dr. William Fordyce, Dr. R. C. Buist, and the President.—Dr. Munro Kerr replied.—Dr. A. Linn read a paper on two cases of Albuminuria in Pregnancy and the influence of thyroid extract on the condition. The first case was that of a woman bearing her second child who was seen first when she was eight months pregnant and who had suffered from some dropsy in the face, the hands, and the legs for the previous six weeks. Her urine was examined daily for quantity, amount of albumin and urea, and the specific gravity. It contained a large amount of albumin on admission. She was put to bed and milk diet was given. She improved considerably and the case was considered to be a suitable one for the study of the effect of thyroid extract as it offered a long enough preliminary period to get the urinary norm. The case was under careful observation for 14 days and then thyroid extract was given for three weeks before the labour was induced. Labour was brought on as she complained of severe headache and dimness of vision. The result of giving five grains of thyroid extract thrice daily was that the average daily quantity of urine remained almost constant except during the week preceding delivery when it increased from an average of 46 to 56 ounces. The daily output of urea was all through under the normal and gradually increased up to the time of delivery. The proportion of albumin did not notably change till after delivery. Headache and dimness of vision were not prevented in the mother. The second case was that of a primipara with considerable œdema of the feet, legs, &c. Thyroid extract was administered for ten days before labour set in, but the results did not show that any special benefit had been obtained.—Dr. H. Oliphant Nicholson read a paper on the Treatment of the Auto-intoxications of Pregnancy by Thyroid Extract and the Anticipation of Impending Eclampsia. It was now generally admitted that eclampsia was the result of an intense blood intoxication and there was good reason to believe that the manufacture of the toxic substances was connected with some failure in the processes of nitrogenous metabolism. Dr. Nicholson believed that there was some relationship existing between the thyroid gland system and the conditions which led to auto-intoxication in pregnancy. The admirable work of Lange and recent contributions of Herrgott, Fruhinsholz and Jeandelize, and others had supplied material suggestive of thyroid and parathyroid insufficiency in some cases of eclampsia. In using thyroid extract as a remedial agent the therapeutic activity of the preparation must be assured and it must be given in doses sufficiently large to produce physiological results or thyroidism. In regard to their reaction to thyroid extract women who suffered from pre-eclamptic symptoms during pregnancy very readily exhibited symptoms of thyroidism; normal individuals were never so susceptible to the effects of the drug. The action of thyroid extract in adequate doses was the acceleration of the pulse with vaso-dilatation and consequent perspiration, diuresis, and often a rise of temperature. If such symptoms did not appear, it must be concluded that either the drug was inert or that it had not been given in sufficient doses. Dr. Nicholson stated that by its vaso-dilating effect it produced increased flow of urine and increased excretion of urea and other bodies; it would thus also hasten the excretion of the toxic substances which were the cause of the eclampsia. Two cases of auto-intoxication during pregnancy were related and the effect of thyroid extract on them was described in detail.—These two papers were discussed by Dr. Buist, Dr. G. Keppie Paterson, Dr. H. M. Church, Dr. Fordyce, Dr. J. Lamond Lackie, Mr. F. M. Graham, and the President.—Dr. Linn and Dr. Nicholson replied.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—Meetings of this society were held on Jan. 9th and 23rd respectively, Dr. John Irving being in the chair.—Mr. H. J. Roper reported a case of Excision of the Thyroid Isthmus. The patient, a man, aged 20 years, had suffered from difficulty in breathing for many years. In June, 1901, when first seen, he was distinctly cyanosed but was able to get about; he was, however, unable to run or to exert himself unduly without great distress. Examination revealed an enlarged thyroid, chiefly on the right side, compressing the trachea laterally. Treatment for five months with potassium iodide (large doses) and biniodide of mercury ointment externally failed to relieve him. In October, 1901, the isthmus was divided under ether and the lobes of the thyroid gland were widely separated. The result was complete relief in every respect. 16 months afterwards the gland had shrunk considerably and the patient remained quite well.—Dr. T. Churton and Mr. B. G. A. Moynihan took part in the discussion and Mr. Roper replied.—Mr. E. Solly read a paper on a case of Rheumatoid Arthritis associated with Non-specific Urethral Disease.—Dr. Churton read a paper on a peculiar case of Delirium alternating with Stupor.—Dr. E. F. Trevelyan read a paper on the Pyrexia of Phthisis largely based on experience obtained in the Leeds Sanatorium for Consumptives at Gateforth. The importance of rectal temperatures was illustrated by comparative charts. The types of pyrexia as met with in the course of pulmonary tuberculosis were then discussed but he did not think that any chart could be described as really typical of the disease. In one of Ophüls's cases with an intermittent temperature, an elaborate histological and bacteriological examination revealed no other micro-organism present except the tubercle bacillus. Although in chronic stationary pulmonary tuberculosis there might be long apyrexial periods, yet occasionally in some progressive and unfavourable cases there might be little or no pyrexia. Pyrexia was certainly much less marked under the newer methods of treatment. The temperature chart might be influenced (1) by intercurrent affections; (2) by extension of the disease; (3) by the occurrence of complications; and (4) by artificial means. A chart from a fatal case of pneumothorax was shown in which the patient had done very well until three or four weeks previously; the period of collapse was extremely short. As regards the causation of the pyrexia great attention should be paid to possible secondary infections, yet it was not easy to see how in some cases the pyrexia of a pure tuberculous infection could with certainty be distinguished from that of a secondary infection. The presence of even slight pyrexia in cases of suspected pulmonary tuberculosis might be of considerable diagnostic value; in similar cases without pyrexia and where the examination of the sputum gave negative bacteriological results (including inoculation) Dr. Trevelyan thought that it was quite justifiable to try tuberculin in minimal doses. He showed a chart from a case in which a slight but sufficient reaction had been obtained by the tuberculin test used as suggested by Professor Koch. The knowledge obtained from the temperature was of great value in prognosis but the possible occurrence of grave and progressive cases with little or no pyrexia made a careful scrutiny of other symptoms absolutely necessary. The indications for treatment obtained from the pyrexia were complete rest, pure air, and suitable and sufficient feeding. He had no special experience of hydro-therapeutic measures or antipyretic drugs in pulmonary tuberculosis but he was inclined to try the former. Patients with at all considerable pyrexia, including a morning temperature above normal,

were best treated at home, and if the pyrexia abated then they should be sent to a sanatorium. He showed a chart from such a case. He had to thank Dr. E. A. Wilson, the resident medical officer at Gateforth, for preparing several charts.—Mr. C. Richardson, Dr. J. Gordon Black, Mr. J. W. Draper, Dr. W. D'Oyly Grange, Dr. H. Johnstone Campbell, and Dr. J. Allan took part in the discussion, and Dr. Trevelyan replied.—Mr. W. Hall read a paper on the Question of the Supply of Pasteurised and Humanised Milk to the Infant Poor of the Community.—A large number of cases and specimens were shown.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 20th, Dr. H. Angus, the Vice-President, being in the chair.—Mr. C. F. M. Althorp read notes on a case of Spinal Caries with Paraplegia in which laminectomy had been performed. The patient was a lad, aged 18 years, admitted to the Bradford Royal Infirmary in December, 1901, on account of difficulty in walking. There was no pain but there was stiffness of the left hip and knee-joints. In 1898 he had been in hospital and had an abscess opened in the lumbar region; the wound had healed up and kept dry and he had been in good health till November, 1901, when he began to have stiffness in the left leg and difficulty in walking. On admission there were two projections of the dorsal spines, one in the upper and the other in the lower region. There was no local tenderness. The scar of the lumbar abscess was sound. The patient could stand alone and walked a little with great difficulty. There was no affection of the bladder or rectum. He was kept in bed with extension to the spine. The weakness increased so that he was unable to stand. Laminectomy was performed on Jan. 7th, 1902. Four spinous processes were removed over the lower projection, the laminæ were divided on each side, and flaps of bone were turned upwards and downwards exposing the dura mater for three inches. The space between the dura mater and the bone was filled with granulation tissue. The dura mater was not opened. The granulation tissue was removed. The spinal cord did not appear to be flattened. The bone flaps were replaced. Gauze drainage was employed. The wound healed well. At the end of a month he could sit up and the rigidity had passed off, but he was unable to raise his limbs from the bed. He eventually left the hospital and was taken out in a bath-chair during the summer. In November he walked to the infirmary from his home, a distance of about a mile.—Dr. A. C. F. Rabagliati read notes on the medical treatment of a case of Ovariotomy. The patient was a woman, aged 30 years, who imagined herself pregnant but who proved to be suffering from an ovarian tumour. She had suffered a good deal from dyspepsia and "bilious attacks" which were due, Dr. Rabagliati considered, to her habitually taking more food than she could assimilate. He expressed it as his opinion that the growth of the tumour was directly due to the ingestion of an excessive amount of nutriment. For two or three weeks before the operation the patient was put on a scanty diet, consisting chiefly of liquids, and after the operation a similar dietary was enjoined. A report six months after the operation stated that she was doing well and gaining weight.—Dr. Angus, Mr. P. E. Miall, Dr. T. J. Wood, and Dr. F. W. Eurich made remarks.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held at Manchester on Jan. 16th. The honorary general secretary (Dr. E. O. Croft) read the annual report which showed that the membership of the society had been well maintained. During the year eight ordinary meetings had been held—three at Manchester, two at Liverpool, two at Sheffield, and one at Leeds. The attendances had been good and 70 items, in the form of papers, cases, and specimens, had been contributed. The statement of the honorary treasurer (Mr. R. Favell) indicated that the financial condition of the society continued to be highly satisfactory. The following were elected office-bearers for 1903:—President: Dr. J. E. Gemmell. Vice-Presidents: Dr. S. Buckley, Dr. W. J. Sinclair, Dr. H. Briggs, Dr. T. B. Grimsdale, Dr. T. Kilner Clarke, Mr. C. J. Wright, Mr. G. H. West Jones, and Dr. Sinclair White. Council: Dr. A. Donald, Dr. T. A. Helme, Dr. A. W. W. Lea, Dr. S. Nesfield, Dr. D. Lloyd Roberts, Mr. J. P. Stallard, Dr. W. Walter, Dr. W. Murray Cairns, Dr. E. T. Davies, Mr. P. Edwards, Dr. R. Humphreys, Dr. J. McClelland, Dr. A. M. Paterson, Dr. J. Braithwaite, Mr. H. Littlewood, Mr. H. Robson, Dr. A. E. L. Wear, Mr. P. E. Barber, Dr. J. W. Martin, and Mr. A. A. Payne. Honorary treasurer: Dr. Croft. Honorary general secretary: Dr. A. J. Wallace. Honorary local secretaries: Dr. J. Scott, Dr. A. Stookes, Mr. W. Thompson, and Mr. S. Barber.—A vote of thanks to the retiring President (Dr. Buckley), proposed by Dr. Lloyd Roberts and supported by Dr. Briggs, Dr. Martin, Dr. Croft, and Dr. Scott, was carried with acclamation.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 8th, Dr. John Gordon, the President, being in the chair. The following pathological specimens were exhibited:—Dr. G. M. Duncan: Specimens and Slides of Hydatid of the Human Breast; Malignant Adenoma of the Uterus; Intra-canalicular Myxoma of the Breast; and Blood-films from a case of Pernicious Anæmia.—Dr. J. Gordon: Tumour of the Frontal Region of the Brain.—Dr. H. M. W. Gray: Double Tumour of the Parotid and Submaxillary Glands, with Slides; Ruptured Extra-uterine Gestation; Abscess of the Kidney; and Congenital Dislocation of the Hip.—Dr. Levack: Skiagrams.—Dr. Lister: Tumour of the Mediastinum, with Slides; and Microscopic Slides of Leucocythæmic Blood, Chronic Glomerular Nephritis, and Septic Necrosis of the Liver.—Dr. J. Marnoch: Slides from a case of Symmetrical Epithelioma of the Legs; Gangrenous Gall-bladder and Biliary Calculi; Pyo-Nephrotic Kidney with Ureteral Calculi; Carcinoma of the Stomach; Intestinal Concretion; and Synovial Membrane from a Tuberculous Knee.—Dr. R. A. Slessor (for Dr. Rose): Perforated Appendix with Concretion.—Dr. C. H. Usher: Leuco-sarcoma of the Choroid.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 7th, Mr. J. Mackie, the President, being in the chair.—Mr. W. M. Willis showed (1) a young woman after removal of Congenital Tumours from the head and neck with photographs; (2) a Uterus removed by Abdominal Hysterectomy for Carcinoma of the Cervix; (3) a Prostate removed completely by Enucleation after Suprapubic Cystotomy; and (4) a Vesical Calculus removed by Suprapubic Cystotomy.—Mr. R. J. Hogarth showed a tumour of the Prostate together with the Bladder in a boy, aged eight years, with microscopical specimens.—Dr. J. W. Noble showed a young woman with Aneurysmal Swelling behind the Left Auricle.—Dr. W. B. Ransom showed microscopical specimens of Primary Carcinoma of the Liver occurring in a young lad and read notes upon the case, commenting on its extreme rarity; no other growths were found at the necropsy.—Dr. C. H. Cattle showed microscopical specimens of Carcinoma Uteri.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 23rd, Dr. Thomas G. Stevens, the President, being in the chair.—Dr. B. G. Morison read notes of a case of Cervical Adenitis following measles on the eleventh day. The left supra-clavicular glands were first affected but subsided in three days, when the right side was attacked and subsided, too, in three days.—Mr. Reginald Brown read notes of three women who thought themselves to be pregnant though being but pregnant of flatus which was duly delivered.—Mr. W. Campbell M'Donnell read notes of a case of a man, aged 44 years, whose eyeballs were prominent but whose thyroid gland was not enlarged and who was suffering from Cardiac Failure due to great dilatation of all the heart without any valvular affection and not consequent upon any known cause. It was therefore concluded that the prominent eyeballs with this cardiac dilatation established a diagnosis of Graves's disease.—The case was discussed.

TORQUAY MEDICAL SOCIETY.—A meeting of this society was held on Jan. 15th, Dr. F. D. Crowdy, the President, being in the chair.—A vote of condolence with Mrs. Karkeek on the death of her husband, Mr. Paul Q. Karkeek, was carried unanimously.—Dr. W. Makeig Jones showed a man recovering from a very severe attack of Zona affecting the parts supplied by the third, fourth, and fifth cervical and the second dorsal nerves on the left side, followed by anæsthesia of the affected area.—Dr. Jones also read a paper on Circumcision, a Religious Rite, a Surgical Operation. For the relief of phimosis he strongly advocated, instead of removal of the prepuce, slitting it up as being simpler and more scientific. He suggested that the older surgeons were so familiar with ritual circumcision that when they were called in to operate for phimosis they failed to realise that they were called in as surgeons to relieve a deformity and not as priests to perform a sacrificial rite.

EDINBURGH ROYAL MEDICAL SOCIETY.—A meeting of this society was held on Jan. 23rd, Dr. A. B. Ross, Senior President, being in the chair.—Dr. R. J. A. Berry opened a discussion on the Medical Curriculum. He pointed out the disadvantages of the present curriculum and he brought forward a scheme for a new curriculum based on scientific principles. A long and interesting discussion followed in which many of the proposals set forth in the new scheme were criticised; but Dr. Berry pointed out that the objections raised did not materially affect his scheme.—The Senior President exhibited sections of the Left Side of a Brain showing an area of acute softening involving the angular gyrus and neighbouring parts; also Photographs illustrating the changes in Rheumatoid Arthritis.—Dr. H. J. Dunbar showed Sphygmographic Tracings of some Pulses.

IPSWICH CLINICAL SOCIETY.—The annual meeting of this society was held on Jan. 15th.—The following members were elected as officers for the coming year:—President: Dr. W. W. Sinclair. Vice-President: Dr. G. Vincent. Honorary secretary: Dr. W. A. Gibb. Council: Mr. J. Staddon, Mr. Branford Edwards, Mr. H. B. Rygate, Mr. J. F. C. Hossack, Dr. F. Fowler Ward, and Dr. J. Gutch.—The retiring President (Dr. Vincent) read a very interesting paper on Motor Cars for the Medical Profession.—A discussion followed in which a large number of the members joined.

ERRATUM.—In the discussion on Puerperal Insanity at the Obstetrical Society of London, published in THE LANCET of Jan. 24th, p. 239, Dr. R. Percy Smith is reported as having quoted Dr. T. S. Clouston to the effect that 75 per cent. of the puerperal cases admitted to Morningside Asylum followed illegitimate births. The figures should have been 25 per cent.

Reviews and Notices of Books.

Text-book of Physiological and Pathological Chemistry. By G. BUNGE, Professor of Physiological Chemistry at Basle. Second English edition; translated from the fourth German edition by FLORENCE A. STARLING and edited by ERNEST H. STARLING, M.D. Lond., F.R.S. London: Kegan Paul, Trench, Trübner, and Co. 1902. Pp. 476. Price 16*s*.

IT is not surprising that this admirable and scholarly account of physiological researches has reached a second English edition, the translation by the wife of the editor being based upon the fourth German edition. The third German edition was reviewed in THE LANCET of May 25th, 1895, p. 1319. As pointed out by the editor in his preface, Professor Bunge's lectures on physiological chemistry have had a great influence on physiological thought both here and abroad, but not all the conclusions deduced by the author are shared by the majority of physiologists and thus Dr. Starling has decided to indicate in a footnote the existence of other opinions "rather than to interfere in any way with the vitalistic mode of thought which gives these lectures much of their interest and individuality." There remain, however, the experimental details of Professor Bunge's inquiries, and from the clear account given the reader will be able to form his views as to the direction in which their significance lies. Professor Bunge cannot be convicted of making indefinite statements. This is particularly evident in his lecture dealing with iron. The universal acceptance of the doctrine concerning the synthesis of hæmoglobin from oxide of iron and proteid would, he says, be quite incomprehensible were it not for the success which physicians think they have achieved in the treatment of chlorosis by the administration of inorganic preparations of iron. As a matter of fact, investigation has shown, he adds, that the iron given with the object of making hæmoglobin is probably not absorbed at all. On the other hand, it is indisputable, he says, that the iron that exists in normal food in the form of organic compounds is far more readily and more completely absorbed. There is iron in almost all articles of food with the curious exception of milk which contains mere traces, and "in the light of our present knowledge it seems probable that children are often rendered anæmic by the milk diet being too prolonged or too exclusively employed." Professor Bunge also states that the iron of the cereals exists in the husks and that whole wheat meal contains five times as much iron as ordinary wheat flour. Bearing this fact in mind it is explained how irrationally anæmic people are fed. As an instance, the poor "bloodless seamstresses" are quoted who eat white bread and drink tea. "With the aid of all our chemical knowledge we could not give to animals which we wish to make anæmic any food with less iron in it." The author obviously loses no opportunity of pointing a dietetic moral from chemico-physiological facts. Again, in the lecture in which he deals with intestinal gases he points out that hydrogen may give rise to much discomfort, owing to its very low coefficient of absorption, and it follows from this that patients suffering from chronic dyspepsia and disposed to flatulence should be careful to avoid such articles of diet as tend to butyric fermentation in which hydrogen is involved.

The chapters are singularly lucid, so that, in the words of the editor, the author has really succeeded in making the dry bones of physiological chemistry interesting even to the beginner. Much praise is due to the translator for preserving the bright and attractive style of the original.

The Principles of Bacteriology; a Practical Manual for Students and Physicians. By A. C. ABBOTT, M.D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Sixth edition, enlarged and thoroughly revised, with 111 Illustrations, of which 26 are coloured. London: H. K. Lewis. 1902. Pp. 641. Price 12*s*. 6*d* net.

WHEN the first edition of this work was published eleven years ago it was one among a very small number of works on bacteriology at the disposal of the student. Now there are very numerous competitors, both English and American, but the fact that a sixth edition has been called for shows that, notwithstanding its many rivals, it is still a favourite work. It differs from most text-books in that, in addition to the large part of the book devoted to practical methods, the systematic portion is developed around a definite thread of practical work and the student is taught how to obtain and how to use his own material. It is possible that more systematic treatises may be found, but if a book had to be selected by which an intelligent student of medicine, not too much hampered by impending examinations or the restrictions of anti-vivisection laws, might teach himself bacteriology it would be difficult to find a better work than this by Professor Abbott.

The ground covered by the book is much the same as that included in most text-books but it conveys an impression, difficult to explain, that it is written by a practical worker conversant with the subject from its commencement and it stimulates the reader in the same way as does the study of an original paper. The present edition has grown considerably and has been brought up to date. The chief additions consist in descriptions of the micro-organism of epidemic cerebro-spinal meningitis—a disease which American investigators have done much to elucidate—of the bacillus dysenteriæ, and of those organisms which closely resemble bacillus tuberculosis in their morphology and staining reactions. There is also a description of the more important pathogenic streptothrices. The chapter on Immunity gives a very clear account of the growth of the various theories advanced and emphasises the work of the early investigators and the steps which led to the fertile hypothesis of Ehrlich and his co-workers.

A well-balanced view of the subject is thus obtained by the student instead of his attention being directed too exclusively to the most recent work. A short chapter on the bacteriological examination of water, air, and soil concludes the book and a very useful appendix gives a list of the apparatus and chemical reagents which are necessary for a beginner's laboratory. This appendix shows the practical aim of the work, though it is less necessary now that so many bacteriological laboratories exist than it was when it was first drawn up. The book is one to be recommended to both student and physician.

A Text-book of the Diseases of the Ear, for Students and Practitioners. By Professor ADAM POLITZER of Vienna. Translated at the personal request of the Author and edited by MILTON J. BALLIN, Ph.B., M.D., and CLARENCE L. HELLER, M.D. Fourth edition, revised and enlarged, with 346 Illustrations. London: Baillière, Tindall, and Cox. 1902. Pp. 884. Price 25*s*.

A NEW edition of this authoritative work on aural surgery will, we expect, receive as warm a welcome from the English-speaking portion of the medical profession as that which was accorded to the previous translations. This volume contains some 100 pages more than did the third edition and has allusions to all the advances worthy of note that have been made in aural surgery during the past eight years—and these are not slight. The chief additions are those with which we shall deal, as we have already considered the general aspects of the book on previous occasions. Amongst the new methods of treatment the most valuable is a description of the usual indications for applying massage to the ear by means of the electromotor masseur; the part, also, referring to the means of estimating the auditory acuteness is very much enlarged and the tests are discussed with greater minuteness than was previously the case. In this edition we find for the first time a separation of chronic non-suppurative disease of the middle ear into its two main divisions, adhesive and sclerotic; but, great authority though Professor Politzer is, he is obliged to acknowledge that regarding the differential diagnosis between these two affections we are at the moment confronted with an unsolved problem which will only be cleared up by further anatomical, pathological, and clinical investigations. So for the present we must be content to be grateful for the clear and lucid manner in which the differentiation has been so far laid down. It would be well if this recognition of the as yet undefined boundary line between the two affections were clearly admitted, for the descriptions, as laid down for us, of the pathological conditions found in oto-sclerosis are those of advanced cases, and there must of necessity be stages earlier than those in which bone formation is found which will throw light on points now obscure and will assist in defining oto-sclerosis more sharply.

Professor Politzer condemns in oto-sclerosis the radical operation of removing the drum, ossicles, and posterior superior osseous wall of the meatus as of no value and he altogether condemns the operation for removal of the stapes. We commented on the desirability of a veto on this operation in our last review and welcome it now, although the value of such a veto is diminished by the fact that in the interval the operation has practically condemned itself.

The treatment of middle-ear suppuration is very full, all the modern variations in the radical operation being considered, and the diagnosis and treatment of the graver intracranial lesions receive far more generous treatment than has been accorded to them in previous editions, while the same may be said with regard to the chapter devoted to the Nose and Naso-pharynx. It would have been extremely valuable, however, had Professor Politzer expressed his views as to the influence, favourable or otherwise, of intranasal treatment on the course of non-suppurative middle-ear disease. Finally, a very useful addition is made with regard to the requirements for testing the auditory acuteness of recruits of the armies and navies of Great Britain and the United States.

The volume is profusely illustrated, though but few of the illustrations are new, and our previous remarks as to the somewhat diagrammatic character of a large number of them equally apply to this volume; the membrana tympani as drawn is anatomically correct, but is not as seen clinically. The translation is admirably clear and remarkably free from error and we congratulate the translators on their work. This volume maintains the high standard attained by the previous editions and is one which we can heartily recommend as the most valuable book of reference on aural surgery as it contains reference to all that is known on the subject.

Notes on Optics for Students of Ophthalmology. By A. S. PERCIVAL, M.A., M.B. Cantab. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1902. Pp. 30. Price 1*s*.

THIS pamphlet contains a number of important theorems in geometrical optics, most of them being accompanied by full demonstrations. The subject, it must be admitted, is an extensive one and in several of its developments requires the application of advanced mathematical methods, but a knowledge of it is absolutely essential for comprehending many of the phenomena of normal and abnormal vision. As stated in the preface, these "Notes" were published primarily for post-graduate students attending the author's lectures and demonstrations on ophthalmology at the Northumberland and Durham Eye Infirmary. They are obviously well adapted for the use of students of ophthalmology at any stage of their training and should be read in connexion with Dr. Percival's systematic treatise on "Optics," reviewed in THE LANCET of Dec. 16th, 1899, p. 1675. Those who are acquainted with this valuable work will hardly fail to appreciate the "Notes" which by appropriate condensation have been made to cover a wider field than might have been expected from their modest dimensions. The principal theorems demonstrated in the first 20 pages deal with the reflection of a small axial pencil of light at a spherical surface, the refraction of a small axial pencil at a single spherical surface, the relative size of the image and the object, the effect of thin lenses, the phenomena of magnification, and remarks on the use of Donders's eye, illustrated by numerical examples. The subject coming next in order—namely, the minimum visual angle in a normal eye—is one that has an interest for a considerable number of persons who have little, if any, acquaintance with ophthalmology. Astronomers, both professional and amateur, often write to technical journals, some asserting and others denying the visibility to the naked eye of the planet Venus as a crescent, or the visibility of the satellites of Jupiter or the planet Uranus, or certain faint fixed stars. On pp. 20 and 21 Dr. Percival shows that the minimum useful visual angle is the angle subtended at the nodal point of the eye by two foveal cones. The distance of the back of the eye from the nodal point being 15 millimetres and the diameter of one foveal cone being 0·002 millimetre, the ratio of the numbers 15 and 0·004 will at once give the value of the visual angle as 55 seconds of arc. In other words, this means that a dot, granule, or disk may become visible at a distance equal to 3750 times its diameter, but of course the conditions must be favourable as regards the nature of the background, the intensity of the illumination, and so forth. The next few pages are devoted to a geometrical discussion of some phenomena of ophthalmology and retinoscopy; under the former of these the author gives an ingenious geometrical explanation or "proof" of the magnification of the fundus as seen by the direct and also by the indirect method. The concluding portion of the pamphlet contains formulæ

relative to eccentric pencils of light and circles of least confusion, a tabular view of the optical constants of the normal eye, and illustrations of the use of these constants. The mathematical knowledge necessary for understanding the "Notes" does not go beyond a few well-known propositions in Euclid and some quite elementary trigonometry.

Festskrift ved Indvielsen af Statens Serum Institut. (Contributions from the University Laboratory of Medical Bacteriology to celebrate the Inauguration of the State Serum Institute.) Edited by CARL JUL. SALOMENSEN. Copenhagen: O. C. Olsen and Co. 1902. Pp. 277.

THE splendid State Serum Institute at Copenhagen—the direct outcome of Professor Salomensen's energetic representations to the Danish Government—was formally inaugurated on Sept. 9th, 1902,[1] and a collection of 12 papers by workers in the University Laboratory of Medical Bacteriology was issued as a souvenir of that interesting ceremony. The volume forms a handsome quarto of nearly 300 pages well got up and fully illustrated by plans, charts, and drawings, the entire letter-press being rendered in the English language, a significant fact and one constituting a high compliment to British workers. Although the papers, for the most part, deal with problems connected with toxins, anti-bodies, and agglutinins, all have a wide bacteriological interest and are both valuable and instructive.

The editor, in the first article, on the Rise and Growth of the State Serum Institute, traces the progress of the movement, initiated in 1894 when the Minister of Ecclesiastical and Educational Affairs first granted a sum of £550 to the University Laboratory of Medical Bacteriology to enable its director, Professor Salomensen, to make serotherapeutic experiments and culminating in 1902 in the building and equipment of the splendid State Serum Institute which is itself fully described. From the accompanying plans the reader can appreciate the care that has been expended on every detail of the construction of this institute and the foresight which has provided not only for its every present requirement but also for its inevitable expansion in the immediate future.

This paper is followed by a second, by the same author, entitled "General Pathology as a University Subject." This is a very thoughtful and eminently suggestive article and in it Professor Salomensen explains at some length his views as to the value and extent of university teaching in general pathology and finally insists on the importance of the inclusion of this subject in the medical curriculum and further on the necessity for the foundation of an institute for general pathology.

A voluminous contribution on Physical Chemistry applied to Toxins and Antitoxins, by Svante Arrhenius and Thorald Madsen, is followed by a "preliminary note" by the same authors, describing some highly ingenious experiments devised for the determination of "the molecular weight of diphtheria toxin," based upon the conclusions of Hüfner and Euler that the velocity of hydrodiffusion is in inverse proportion to the square root of the molecular weight. By allowing diphtheria toxin to diffuse for certain periods through cylinders of gelatin and subsequently testing the toxicity of various portions of these cylinders upon animals, the authors obtained a diffusion value represented by the figure 0·0142. Diphtheria antitoxin tested in a similar manner gave a diffusion value of 0·00149, thus indicating that the molecular weight of the antitoxin is higher than that of the toxin, a view quite in keeping with our present conception of the relative size of toxin and antitoxin molecules. Other interesting and valuable results are presented in Studies on Diphtheria Toxin, by Georges Dreyer and Thorald Madsen; the Fate of Typhoid and Cholera Agglutinins during Active and Passive Immunisation, by Thorald Madsen and Axel Jorgensen; Coli Agglutinins and their Course of Formation, by Ernest Levin; and the Decrease of Anti-bodies in the Organism indicated by a Formula, by Thorald Madsen.

Miss Mabel Purefoy Fitzgerald (Oxford) and Georges Dreyer contribute a valuable criticism on the neutral red reaction as employed in differential analyses, entitled "The Unreliability of the Neutral Red Reaction as generally employed for the Differentiation of Bacillus Typhosus and Bacillus Coli," in which, after pointing out the factors concerned in the production of the reaction and the many fallacies affecting the result, the authors suggest the use of a medium consisting of 3 per cent. of lactose bouillon with the addition of 0·5 per cent. of a 1 per cent. watery solution of Grübler's neutral red. In a medium of this composition the bacillus typhosus produces a yellow colour in from four to six days, and the bacillus coli a red colour—irrespectively of the initial reaction of the medium.

Vilhelm Jensen contributes some observations on the Histogenesis of the Nodules produced by the Subcutaneous Injection of the Saccharomyces Neoformans (Sanfelice) in which he describes minutely the changes that occur in the subcutaneous tissue of the guinea-pig as the result of the inoculation of from five- to seven-day old cultivations of the saccharomyces neoformans, at varying periods of from three and a half hours to 35 days after inoculation. From his observations it would appear that during the first 48 hours after inoculation many of the yeast cells are ingested by the polymorphonuclear leucocytes and destroyed, whilst others, although apparently unaffected, make no attempt at multiplication. From about two days onwards the remaining living yeast cells exhibit gemmation and at the same time internal changes occur which render their staining reactions markedly different from those of the cells of this same yeast when cultivated in artificial media.

Georges Dreyer describes a New Apparatus for the Rapid Delivery of a given Quantity of Fluid which he has devised and which should prove extremely useful for the purpose. In describing a Chemotactic Experiment Professor Salomensen points out the negative chemotactic action exerted by dead infusoria such as paramoecia upon the living forms of the same and allied species. With this paper concludes a volume full of interest and containing, moreover, several noteworthy additions to bacteriological knowledge.

Motor Cars and the Application of Mechanical Power to Road Vehicles. By RHYS JENKINS, M.I.Mech.E. With 100 Illustrations. London: T. Fisher Unwin. 1902. Pp. 362. Price 21*s.*

WE are compelled to say that from the point of view of readers of THE LANCET this is a somewhat disappointing volume. It contains but little which will guide the would-be purchaser in his choice of a car and nothing at all which will give him an idea of the probable cost of maintaining one. To the reader who has already a fairly competent knowledge of cars and of motor mechanics it may be useful, but it is hardly the book for the practitioner who may be contemplating a change from horse to mechanical traction.

The first 160 pages may be dismissed as purely historical—not for that reason devoid of interest, but as being of no practical utility to the novice and as having no bearing on the motor cars of to-day. The remainder of the book adopts the usual classification of electric, petrol, and steam carriages, followed by chapters on gears, brakes, tyres, horse-power, and conclusions.

The chapter on the Petrol Motor gives a clear account of

[1] See THE LANCET, Oct. 4th, 1902, p. 961.

the Otto cycle and is followed by a practical description of the various forms of ignition adopted, tube, high-tension, magneto, &c. As regards the first named it is very properly pointed out that tube ignition is not adjustable and that it may be dangerous. Succeeding chapters deal with various makes of car, and while, for obvious reasons, it is no doubt difficult for the author to institute any comparison, it must be said that more information might be given as to the suitability of certain cars for certain work; moreover, there is an entire absence of any indication of the cost of any carriage, which it can hardly be necessary to keep secret, as many of them are publicly advertised with their prices in the automobile journals; and all are, of course, fully described and the prices quoted in the ordinary trade lists. This much may be said, that most of the cars described and illustrated cost far more than the average country practitioner is likely to wish to invest. In this connexion it should be noted that a large amount of the prime cost of any car must be written off as "depreciation" for every year it is in use. A car bought new four years ago is hardly a saleable article to-day. As soon as an attempt is made to sell it the objection is raised of "obsolete pattern." An old bicycle of the "bone-shaker" period is scarcely less saleable than an early pattern motor car, a point which practitioners may remember in noting "depreciation of car" in their income tax returns.

In connexion with tyres the author says that without the pneumatic tyre "the speed now looked for would be unattainable." If the sole idea of the motorist is to go fast without regard to "legal limit" or "police traps," then no doubt pneumatic tyres are a necessity. But with regard to the "doctor's car" other things have to be considered. The puncture is sure to come sooner or later; it is bad enough in the course of an ordinary day's work, with its attendant delay, inconvenience, and expense. If it occurs, as it is as likely as not to do, when going to a distant consultation or operation the matter is most serious; and though it may occur but once in a twelvemonth that once is enough to condemn the system for the practitioner with such responsibilities. We earnestly direct the attention of manufacturers to this point. We are glad to see that the car described as the "doctor's car" (p. 235) is fitted with solid tyres. In fact, we believe that this particular car, the "Albion," is one of the very best that is built for professional purposes, the makers distinctly stating that they do not build their car for high speed but for strength and trustworthiness and "to stand solid tyres." Certainly, if a car is not "built to stand solid tyres" it would appear to us that, save for very high-pressure and high-speed cars which would be better off the roads altogether, they are built with a margin of strength that is barely sufficient for safety.

The section on Motor Cycles will doubtless appeal to many of the younger and more active members of the profession, and, indeed, these cycles are amongst the most satisfactory of the applications of internal combustion engines to road travelling. The different "makes" will be found fully described as also a certain number of motor wagons and vans which, however, can be of but little interest to members of the medical profession.

The illustrations consist mainly of the ordinary advertisement blocks of the different manufacturers and while giving a good idea of the cars call for no special comment.

A correspondent informs us that, having just made up his accounts for the year 1902, he found that the total cost of running a couple of motor cars, almost entirely in ordinary practice in a not very hilly district, was £171 19*s.* 11*d.*, *plus* a small sum paid for cab-hire, and without reckoning anything for "wages" or "depreciation," the sum stated being the actual out-of-pocket costs of running and repairs.

We may add that we believe the ordinary "water-cooled" car to be dangerous in a severe frost, even if the precaution is taken to run off all the water on coming in. The motor car often saves a considerable amount of time and it often loses an hour in the busiest part of the day.

LIBRARY TABLE.

Elements of Pharmacy, Materia Medica, and Therapeutics. By WILLIAM WHITLA, M.A., M.D.R.U.I. London: Henry Renshaw. 1903. Pp. 637.—This is the eighth edition of this valuable work and that fact is in itself a proof that Sir William Whitla's work has met with its just reward. As in the last edition, a review of which appeared in THE LANCET of Sept. 17th, 1898 (p. 755), the book is divided into five sections dealing respectively with pharmacy, the administration of medicines, materia medica, therapeutics, and non-official remedies. The first part gives a most full and clear account of pharmaceutical methods and the section on the administration of medicines is admirably written, as are the directions for prescription writing with which the section ends. The section on non-official remedies is as much up to date as can be expected when we consider the number of new coal-tar synthetic preparations that are brought out every week. In the therapeutical section there is one passage in which we find ourselves at variance with Sir William Whitla. We refer to that dealing with carbolic acid administered internally. On p. 299 we find: "Even when given internally one-third of the lethal dose of the pure acid will cause death if it be diluted freely." We cannot think that this statement is in accordance with the experience of others. The minimum lethal dose of the pure acid is given as from rather more than one drachm [1] to 231·5 grains—i.e., 15 grammes [2]—and we cannot think that 22 grains administered well diluted would cause death. According to our own experience and that of others the dose of carbolic acid prescribed in the Pharmacopœia may be largely increased, if the acid is diluted, without any ill effects. We know personally a medical man who, when travelling in the East, was attacked by very acute fermentative diarrhœa accompanied by severe pain and collapse. He took one drachm of liquid carbolic acid—i.e., crystallised acid liquefied after heating with about 10 per cent. of water—and mixed this dose with about a pint of water. This quantity he took in an hour. When he had taken half the quantity the pain and the fermentation ceased. By the time he had taken the full quantity the collapse had gone and he felt quite warm and comfortable. He did not suffer from carboluria or any symptom of carbolic acid poisoning. In THE LANCET of April 8th, 1899, p. 958, there appeared a paper from the pen of Mr. A. Wiglesworth on large doses of carbolic acid in influenza. Mr. Wiglesworth gave his patient 12½ grains of pure acid every two hours in one and a half ounces of water with four drachms of syrup, the same patient having previously taken by mistake a dose of 19 grains without any ill effects. In THE LANCET of Dec. 9th, 1899, p. 1589, appeared a paper from the pen of Dr. J. M. Atkinson on a case of bubonic plague treated in the same way. Dr. Atkinson's patient took 200 grains of acid in three days. It may seem ungracious to insist so much upon this blemish in a book otherwise so excellent, but we feel that carbolic acid is a valuable drug and that the official dose is far too small. Its effects when given internally well diluted are quite different from its corrosive or "shock" action when given pure or from its undoubted toxic action when absorbed by the skin, the digestive processes seeming in some way to render the drug comparatively innocuous.

Ruskin: Notes on Pictures. Vol. I., Turner; Vol. II.,

[1] Shoemaker: Materia Medica and Therapeutics.
[2] Falck, quoted by Wynter Blyth: Poisons.

Academy Notes, Notes on Prout and Hunt. London: George Allen. 1902. Vol. I., pp. 468; Vol. II., pp. 375. Price of each volume, 7*s.* 6*d.* net.—These volumes consist of criticisms by Ruskin not heretofore reprinted. They are now re-arranged and re-edited by Mr. E. T. Cook and the work could not have been in safer hands. It is not our province to discuss Ruskin's position as a critic. Suffice it to say that he was the first of moderns who taught men how to look at pictures and how to appreciate Turner, though it may seem inconceivable nowadays to anyone who looks at a Turner drawing or picture, especially the water-colours (for many of the oil-paintings are obviously but shadows of their former selves), that he was so neglected as he used to be. Much the same, however, is the case with one of his disciples recently gone from us—namely, Alfred Hunt. But as Turner's work has won the palm so will that of Hunt. In his introduction to the volume on Turner Mr. Cook gives Ruskin's own description of his labours when arranging the Turner drawings now in the basement of the National Gallery. In the introduction to Vol. II. Mr. Cook refers to the influence which the "Academy Notes" had on their first appearance and mentions how honestly Ruskin refused to praise any work except that which he considered good, even though it were the work of his own friends. This volume will be probably of more interest to the general reader than Vol. I., first, on account of its dealing with many artists and, secondly, because in it we find notes on such well-known pictures as Leighton's "Cimabue's Madonna carried in Procession through the Streets of Florence," Millais's "Rescue," "Ophelia," and "The Blind Girl," Brett's "Stone Breaker," and pictures by J. F. Lewis, Hook, Inchbold, and many others. All lovers of art owe a debt of gratitude to Mr. Cook for bringing together and rendering accessible to the many these criticisms.

Mosquitoes and Malaria. By T. FREDERICK PEARSE, F.R.C.S.Eng., M.R.C.P. Lond., Special Plague Officer with the Government of Bengal. 1902. Calcutta: W. Newman and Co. (price one rupee). London: Edward Stanford (price 1*s.* 6*d*).—This little pamphlet is an expansion of a lecture delivered by Mr. T. F. Pearse at the Dalhousie Institute, Calcutta, on April 8th, 1902. This lecture we reviewed in THE LANCET of May 17th, 1902, p. 1412. The expansion now before us is illustrated with plain and simple drawings of different mosquitoes, of their various metamorphoses, and also of stages of the malarial parasites. The pamphlet should certainly be read by anyone intending to travel through a malarious country.

Practical Hints for Travellers in the Near East. By E. A. REYNOLDS BALL. London: E. Marlborough and Co. 1903. Pp. 140. Price 2*s.* 6*d.*—Though it is quite hopeless to learn how to travel from a book yet Mr. Reynolds Ball's little work will give the aspiring tourist some useful hints. For travellers in Turkey it cannot be too much insisted upon that not only is an ordinary passport obtained and *visé* in England necessary, but also, except in Constantinople, a *teskere*, or local passport. So far Mr. Reynolds Ball gives advice. But the traveller will also find that even when fortified by these documents the local official will make himself disagreeable. There remain two methods of procedure. A minor official may be bullied, but a more important one must be bribed unless the traveller is content to wait a week and to spend large sums of money in telegrams to his Embassy. The medical and other hints in the book are good, as a rule, but we must take exception to the remark on page 36 concerning tent-pitching: "After rain be careful to ease the ropes a little or the shrinking may pull out the pegs." It is no good waiting until after rain to ease the ropes, for by that time either the pegs or the tent will have given way. If a tent is pitched in rain or when it looks like rain the ropes must be left slack. On page 42 we find directions for treating bites by wild animals: "Wash out the wound with the strongest antiseptic solution ..... such as zinc chloride (20 grains in a tablespoonful of water) or corrosive sublimate (very poisonous)." A bite from a wild animal, unless the part has been regularly chewed, is generally a series of punctures. The only way of "washing out" such is to swab out each individual puncture with an armed probe dipped in the antiseptic solution. If this cannot be done the punctures should be laid open. Again, we find on page 56, in a paragraph on surgery: "A hammock can be improvised by running a stick through the sleeves of a great coat or ulster." Now this description would be absolutely useless to the uninstructed person. We should put it somewhat after this fashion. The coat must be unbuttoned and laid flat on the ground with the outside next the ground. Then the sleeves must be turned inside out and laid flat on the inner side of the coat. Next the coat must be buttoned. Then two poles (not sticks) must be taken and one of these must be run through either sleeve-hole, so that they come out at the bottom of the coat. This sentence we hope that even the most ignorant could understand, but he would learn nothing from the one in the book. On page 49 we find "Permanganate of Potassium. This is the basis of Condy's Fluid." This is not a correct statement.

Looking Back.

FROM

THE LANCET, *SATURDAY, JAN.* 29, 1825.

FOREIGN DEPARTMENT.

ANALYSIS OF FOREIGN MEDICAL JOURNALS.

Tincture of Iodine in Gonorrhœa.

To the various purposes to which iodine has been already applied, we have now to add its employment for the cure of gonorrhœa. Two[1] cases communicated by Dr. HENRY have appeared in the *Gazette de Santé* for Dec. 25, of which the following are translations.

Case 2.

L., aged 33, consulted me in the early part of November, for an inflammation of the mucous membrane of the urethra, which he had laboured under for thirty-six days. He had used, without benefit, sudorifics, copaiba, Bellart's pills, and injections of the acetate of lead. He had at this time no pain in making water, but a copious discharge of a greenish white colour. I made him some injections with *two drachms* of the sulphate of zinc, dissolved in a pint of water, to which was added half an ounce of laudanum. He took at the same time pills of cachou, alum, and turpentine. The discharge did not diminish. I increased the quantity of the sulphate of zinc to *half an ounce* to the pint of water, without any benefit. I then left off the injection and the pills, and gave him fifteen drops of the tincture of iodine in a glass of gum water; twenty-five drops the second day; thirty drops the third day, when the discharge began to diminish. The fourth day he took thirty drops in the morning and fifteen in the evening. The fifth day, thirty drops in the morning, and twenty-five in the evening. The sixth day, thirty drops in the morning, and the same in the evening. I did not see the patient for four days, and then he came with an increase of the discharge, having indulged in an excess of drinking, and he also complained of ardor urinæ. Eight leeches were applied to the track of the canal. On the following day he took thirty drops of the tincture morning and evening; the next day he took forty drops night and morning, and the disease completely disappeared.

☞ We are prevented by press of matter from extending our Foreign Intelligence to its usual length; we shall next week give a description of a preparation lately discovered, and supposed to be the active principle of the Sarsaparilla.

[1] The account of Case No. 2 only has been transcribed.

THE LANCET.

LONDON: SATURDAY, JANUARY 31, 1903.

The Fire at Colney Hatch Lunatic Asylum.

In the early hours of the morning of Jan. 27th there occurred a tragedy so appalling in its suddenness and heartrending by reason of its attendant circumstances that the barest and briefest record of the event brings horror to the mind. The temporary wards at Colney Hatch Asylum, which contained some 330 persons of unsound mind, together with 40 members of the asylum staff, were destroyed in a very short space of time by fire, the total loss of life being 52, all women. The block of buildings concerned was composed of a one-storeyed parallelogram constructed of corrugated iron and wood and lined with varnished matchboarding. Through the centre of the construction ran a corridor and the block of temporary buildings was connected at its southern end by another corridor with the main buildings of the asylum. At both ends of the temporary block were boiler-houses, and near the boiler-house at the southern end was a store-room for linen. In this store-room the fire is said to have begun. The buildings were heated by hot water and lighted by gas. The fire was first noticed by a nurse who at 5.30 A.M. saw smoke coming from the store-room. She at once pulled the electric fire-alarm and the fireman on duty sounded the steam whistle. This called out the asylum brigade, but the ward known as X 5 was already on fire, and within ten minutes the contiguous ward, X 4, was alight also. By this time the local fire brigades had arrived and the Metropolitan Fire Brigade had been rung up. The asylum itself had no fire-engine but had steam pumps which, according to Dr. W. J. SEWARD, the resident medical officer, had plenty of water. The fire-engines when they came up had a difficulty in obtaining water and a brook which flows at the bottom of the slope on which the buildings stood had to be dammed before they could be adequately fed. The artesian well in the asylum was out of order, so that water had to be obtained from the Barnet Water Company's mains, but the supply was not constant. There was a high wind blowing at the time, at the storm rate, it is said, of 40 miles per hour, and this of course greatly accelerated the progress of the fire. The asylum staff, including the nurses and the resident medical officer, who escaped in their night clothes, worked heroically to rescue the patients, as did also the firemen and the police upon their arrival, but considering the force of the wind, the construction of the buildings, and the helpless condition of the inmates it is a wonder that so many were saved as was the case. A holocaust might have occurred. The trees on the windward side of the building, even those close at hand, were scarcely scorched, while on the leeward side for yards away both grass and trees were utterly destroyed, proving that the buildings were almost immediately converted into a fiery furnace. The temporary buildings, for they were called temporary, had been passed by the Home Office only last year for a further period of five years, so that it must be assumed that their dangerous character in view of such a catastrophe escaped attention. It is possible that the mental affliction of the victims was a blessing rather than an aggravation of the disaster, for many of them would not be likely to realise their danger and would thus escape the agonies of apprehension. So far as can be ascertained most of the unfortunate women were suffocated rather than burned to death, for most of the bodies were found lying on the beds, proving early stupefaction. In the presence of a calamity such as this but little can be said. No lurid descriptions can increase the horror of a fire at a lunatic asylum; the combination of events is always recognised as one of the most terrific of human tragedies. It is a matter to be thankful for that the spread of the fire appears to have been no one's fault. The water-supply, though presumably not deficient for domestic purposes, seems to have been useless to feed the fire-engines, and the construction of the buildings, together with the high wind, made the course of the conflagration very rapid. All that could be done by everyone concerned was done and we can but offer our sympathy to the relatives of the dead, *quarum animabus propicietur Deus*. We are not minimising their grief when we allude with joy to the fact that none of the resident staff in the asylum lost their lives. This crowning point of tragedy was added in the last important fire which took place in an English lunatic asylum, for it will be remembered that in the destruction of Dr. R. BOYD'S asylum at Southall in 1883 Dr. BOYD himself perished (as did his elder son who was staying with him at the time).

The Abuse of Medical Charity.

To induce in the lay mind a proper estimate of the manifold evils of the abuse of medical charity is a task which weighs heavily upon the medical man and which has to be undertaken by the medical press with no sanguine hope of result. No subject, perhaps, has more frequently exercised our powers of argument, and there is scarcely any subject to which we are more ready to turn at any moment when it appears that the cause of the proper exercise of charity may be furthered or the abuse of hospitals and kindred institutions may in some way be diminished; but we do not flatter ourselves that the public is much better instructed. We have insisted before now upon the two-sided evils which arise from the abuse of medical charity. The medical profession, obviously enough, suffers by a diversion from the consulting-room of the practitioner to the out-patient room of a hospital of persons who can afford, and are probably willing if the case were represented to them, to pay fees for the medical labours that they exact. The public, on the other hand, suffer also and suffer a double wrong: firstly, the funds of the charitable are expended upon patients for whose assistance they were never intended; and, secondly, the demoralising effect which unnecessary pauperisation inevitably produces is wrought upon a section of the community. All those inducements to thrift, foresight, and prudent behaviour

which should induce the working man to insure against the day of illness or accident are negatived if he can see a certain refuge whenever the evil day should chance to arrive. If the first aim of charity is to provide for those who are unprovided for, the second should be to teach men that they are helped who help themselves.

On this occasion we revert to the question of hospital abuse not because we have a new and far-reaching remedy to propose, nor because we have been brought into contact with some particularly flagrant example—that, alas, might call for a leading article once every week. The reason for our remarks is in this instance a matter of congratulation, for we revert to the subject because of the sound and strongly expressed opinion of a non-medical speaker. Mr. F. H. BENTHAM at the Bradford Liberal Club a few days ago gave a lecture upon "Bradford Charities and Poor-law Administration," which contained passages showing that it is possible for a man who has no personal concern with the medical profession to appreciate thoroughly, and to give expression to his ideas concerning, the harm caused by the injudicious exercise of medical charity. Mr. BENTHAM pointed with no uncertain finger to loopholes for easy abuse that exist in the administration of some hospitals in Bradford. The Children's Hospital has, he said, no system of recommendation; children are admitted into the institution without inquiry as to the circumstances of their parents. In another direction he showed how the funds of the Royal Infirmary, though not employed to succour those who ought to be paying for medical advice, yet were spent in helping a class who ought to come under the jurisdiction of the Poor-law. Mr. BENTHAM criticised severely the tendency of some institutions to make themselves "popular" at all costs—at the cost certainly of including in their *clientèle* through laxity of inspection many persons who have no right to medical relief without making a proper pecuniary return for it. With such criticism we wish to express our complete sympathy. Whether urged on by heedless philanthropy or by eagerness in the prosecution of scientific work there is no doubt that the governing bodies of many hospital charities admit within their doors hundreds of patients whose free treatment is a disgrace to themselves and an unjustifiable deprivation of the medical practitioners' means of livelihood. By such patients the funds of our hospitals are diverted from their proper channels, while the out-patient departments of these institutions become so overcrowded that the serious illnesses of the genuine poor run a risk of not receiving adequate attention. In conclusion Mr. BENTHAM urged the formation of a charities board for Bradford so as by coördinating the local charities to secure efficiency and economy.

The grievances which Mr. BENTHAM disclosed and discussed at Bradford may be taken as typical of those arising from improperly controlled hospital charity in nearly every large city of England. There has been within recent years an enormous increase in the number of those obtaining treatment in free hospitals, particularly as out-patients, and that increase is more than proportionate to the increase in population. The final remedy for such a state of affairs must come through a rise in the education of the public as regards this question and through unanimous opinion and concerted action in the ranks of the medical profession. The day is looked for when a person will feel ashamed to be the recipient of advice at a hospital knowing that he can afford to pay something for it to a practitioner outside, and when, on the other hand, if he is not so ashamed he will be refused the unwarranted free assistance which he demands. The difficulties of properly limiting charity we know only too well. We look to improved public opinion to remove these difficulties and we welcome such speeches as Mr. BENTHAM'S as important, because likely to impress upon the masses as well as upon the classes the necessity of giving thought to the right uses of medical charity.

An Impeachment of the National Health.

THE current number of the *Contemporary Review* contains a very interesting article by Major-General Sir FREDERICK MAURICE entitled "National Health: a Soldier's Study." The article is the outcome of investigations made by this distinguished soldier and author into the material that offers itself to the recruiting sergeant and into the amount of work that the country obtains from the material so recruited. For some seven years it has been one of Sir FREDERICK MAURICE'S duties to visit the Herbert Hospital for the purpose of sanctioning the discharge from the army of men who have been certified by a medical board as no longer fit for the service. It occurred to him that an alarming proportion of these men had involved the State in considerable expense for which they had given no return. An inquiry into the matter, made with the assistance of the Inspector-General of Recruiting, revealed the fact that out of every five men offering themselves for enlistment in the army only two will be found in the army as effective soldiers by the end of two years' service. In giving these figures Sir FREDERICK MAURICE points out that enlistment is effected after a twofold investigation into the claims of the candidate; for, firstly, the recruiting sergeants do not present to the medical officers men who obviously do not fulfil the physical requirements; and, secondly, the medical officers have standards to which every recruit must conform. When the recruit has passed both the rough and the scientific scrutiny he comes to the third test of his fitness to be a soldier—the test of actual service. Of five men, therefore, who tell the recruiting sergeant that they desire to join the colours only two will be found as soldiers in two years' time. Sometimes the sergeant, sometimes the medical officer, and sometimes the practical work of a soldier's life interferes with their desire, but from one cause or another the proportion 5 : 2 represents the regular wastage. This is an appalling fact at a time when the question of where to get men for our army has become of such vital importance, for we doubt if even during the Napoleonic struggles more apprehension was felt on this subject than was felt in England during the earlier stages of the Boer war, when all our available army was engaged in South Africa, while events in Asia made a huge struggle in the far East by no means a remote possibility. It behoves everyone to see if such a wastage is necessary, for the question of how to obtain recruits for our army would be solved at once if only, say, four of the five willing candidates for the ranks

proved able to remain in the ranks. Everybody must be in accord with Sir FREDERICK MAURICE in his energetic affirmation that the subject is of enormous importance, but we doubt if the medical profession will indorse his view that the figures which he has been able to give form an impeachment of the national health. The fact that so large a proportion of the men who desire to become soldiers fail either to attain to enlistment or to become effective fighting men has led him to believe that for various reasons the maintenance of a virile race is now denied to Englishmen; and the practical object of his paper is expressed in the following words:—"I have," he says, "set forth here the aspect which this question presents to me as a soldier. My object is to call upon the great profession whose immediate concern is health to give us the guide and leading we need, and primarily it seems to me that we ought to call upon the Councils of the Colleges of Physicians and Surgeons, as *ex-officio* great national boards of health, to help and guide us." We may well consider what useful answer can be made by the medical profession to this call.

When some few months ago Sir FREDERICK MAURICE lectured before the Civic Society of Glasgow upon this same subject[1] it must have struck many medical men who read the appeal, then addressed by him in similarly stirring words to our profession, that the particular force of his claim was much abated by the fact that the health statistics of the class desiring to enlist in the army are not those of the population of Great Britain as a whole. The question at once arises whether the national health, to the sad condition of which Sir FREDERICK MAURICE draws the attention of the medical profession, has been fairly impeached. Surely no one of medical experience and knowledge can come to any other conclusion than one—the national health has steadily improved and is steadily improving. Upon this it follows that the material from which those who desire to enlist in the army are drawn is poor material not representative in the least of the health of the nation. All the statistics of public health and all demographical records show that the efforts of preventive medicine, coupled with the spread of education, have immensely bettered the general health of this country, and Sir FREDERICK MAURICE'S figures, so far as they point to the contrary, suggest that the would-be soldiers are drawn to a great extent from sections of the population where this general improvement has not had as yet any marked effect. The candidates for enlistment in the army are usually those who have shown no great aptitude for any of the trades or mechanical pursuits; in some cases they have found out for themselves that their physique and powers of work do not qualify them for the more coveted of civil occupations. We are not suggesting that every lad who desires to take the KING'S shilling has failed in other walks of life; an intending recruit need not be a "waster" or in trouble with his employers or his relatives. But at the same time it cannot be denied that a certain proportion of shiftless folk regard the army as a possible haven when other resources have failed them. These are for the most part ignorant and self-indulgent lads and their health suffers on both accounts. If they manage to enlist and their powers of recuperation are sufficient to allow them to stand the life and benefit by the discipline, they become the splendid stuff that the good British soldier shows himself. But their constant failure produces the wastage which Sir FREDERICK MAURICE is right in regarding as a national calamity. The presence of a large quantity of this shiftless class among those who offer themselves for enlistment makes the would-be soldier's health not representative of the public health of the country, and the fact that a certain proportion of fine healthy young fellows join the colours with genuine ardour, either for patriotic reasons or in search of adventure, does not nullify the other fact that a large proportion of the recruits have led scrambling lives, have been badly fed, have been badly housed, have had their confidence rudely dashed by failure, and have throughout their careers been too ignorant or too careless to take common sanitary precautions. Like Sir FREDERICK MAURICE we regard the depletion of our villages, and the resulting inrush of an unskilled class into our towns, as a most important factor in the lack of stamina displayed by our recruits, and for this reason—it is the inferior of the town immigrants who fail to secure a foothold under their adverse conditions and who accordingly try to enter the ranks of the army. If 5,000,000 or so of the entirely unnecessary and unwelcome adjuncts to our town population could, by any alteration in national economy, be persuaded to go back to the land, and could find on the land occupation that would feed them and their families, the question of recruits would be solved. A hardy race, desirous of seeing large families about them because conscious of ability to provide their offspring with the air, the food, and the space which count for so much in the lives of the young, would soon produce the proper material to fill the ranks of the army. But in the present economic conditions of these islands we cannot expect any movement towards decentralisation. Who is to pay agricultural labourers adequate wages? Who is to find money to build them proper houses? And how, with the spread of modern education, is the population of our villages to be induced to abide in the all-enshrouding dulness and ignorance which satisfied their grandfathers?

While it is undoubted that our progress in sanitary science has been marked, especially during the latter half of the nineteenth century, it is equally undoubted that enormous possibilities for the better lie around us. This Sir FREDERICK MAURICE has perceived, but what part can the medical profession or the Royal Colleges to whom he has appealed play in the special matter brought to their attention? The question of a general improvement in the national health is simply too large to be contemplated from any one particular point of view; it is the question which medical men are always contemplating in a general way. For nobody denies that much might be done to improve the breed. Education of the mothers so that the infancy of the poor should not be attended with the appallingly insanitary circumstances that only too often prevail; provision of proper housing for the working classes, whether in town or country; systematic examination at board schools of the eyes and teeth of all the children

[1] THE LANCET, Nov. 1st, 1902, p. 1220.

so that early mischief might be detected and ill results obviated,—each of these, and for evident reasons, has been found to make for immense good. Again, legislation might induce some of our population to return to the land and regain their bucolic health and vigour in rural toil; the conditions under which factory work is carried on are susceptible of immense improvement. And so on through a list of social reforms that might be prolonged indefinitely. No purpose can be served by attempting to answer a question of such a size as—What are the methods by which our national health can be improved? It is, in the circumstances, enough to point out that year by year progress is made. Here and there the progress is quick, in many directions it is slow, and in some actual retrogression must be confessed; but as a whole our national health has immensely improved, and any deductions drawn from the records of the Inspector-General of Recruiting that would seem to show the reverse must be partial—that is, they must be based upon the consideration of material which is not a representative sample of our population. With regard to the possibility of any of the medical corporations being of particular assistance, we think that Sir FREDERICK MAURICE might well expect their countenance. The wastage among the would-be soldiers does not connote, as he would appear to think, the physical decay of the nation, but it is none the less a calamity, and one which any medical body ought to be proud to try to prevent. All that can be done by the medical corporations when they are approached is to express pious approval of Sir FREDERICK MAURICE'S energy. Undoubtedly their support might assist to get the question seriously debated in Parliament, so that if any scheme were put forward for an ethnological survey of the kingdom it would receive medical backing. Such a survey would be a very expensive undertaking but it might throw light upon many sanitary problems and we should welcome its institution.

Annotations.

"Ne quid nimis."

UNDERGROUND BAKEHOUSES.

THE Wandsworth borough council has recently sent to the occupiers of underground bakehouses within the borough a statement of the requirements with which it will expect them to comply if they wish to obtain the certificate which will next year be necessary in order that they may carry on their trade. Under the Factory Act of 1895 a "place under ground" was forbidden to be used as a bakehouse unless it had been so used before the commencement of the Act. Under the Factory Act of 1901 an underground bakehouse is not to be used as such unless it was so used at the passing of the Act and even then it is not to be used after Jan. 1st, 1904, unless certified by the district council to be suitable for its purpose. An underground bakehouse, moreover, is now defined as one any baking room of which is so situated that the surface of the floor is more than three feet below the surface of the footway of the adjoining street or of the ground adjoining or nearest to the room. On the refusal of the council to grant a certificate the occupier may apply for one within 21 days to a court of summary jurisdiction, but an important point seems to be left in some obscurity by the Act. There does not seem to be any power given to the council or to the magistrate to order structural alterations in a particular case or to make the certificate dependent upon such structural alterations being effected. If this is so the person applying will get a certificate or will be refused one according to the condition of his premises at the time of his application, and it is only fair that he should be warned of the standard with which the council will expect him to comply before going to expense in the matter. The requirements promulgated by the Wandsworth council are well calculated to secure a high sanitary standard in the underground bakehouses within the borough or to bring about their abolition in accordance with the praiseworthy policy of modern legislation. They deal with the materials used for the walls, drainage, light, ventilation, and other points in a thorough and efficient manner, but they will of course involve the owners and occupiers of many premises in considerable expense if they are to be complied with. In the course of the next 12 months the sanitary standard for underground bakehouses may be expected to come under discussion before local authorities and in courts of summary jurisdiction, and the results will be watched with interest by those concerned with the preservation of the public health.

THE PREVALENCE OF SMALL-POX.

DR. J. F. J. SYKES, medical officer of health of St. Pancras, has issued his final report upon the small-pox epidemic of 1901–02 in St. Pancras and London. The report is dated Jan. 7th, 1903. It is a most interesting document and commences with some remarks on the prevalence of small-pox in previous years. After giving statistics Dr. Sykes asks "two leading questions"—

I.—What was the reason for the decrease in the mortality from small-pox in London from 1886 to 1889?
II.—What was the reason for the increase of the prevalence of small pox in London from 1900 to 1902?

and answers them as follows:—

I.—That the decrease in the mortality from small-pox in London subsequent to 1885 was due to the removal of the small-pox hospitals of the Metropolitan Asylums Board out of London, and to the improved system of ambulance removal, assisted subsequently by the Infectious Diseases Notification Act of 1889 and the consequently increased vigilance and activity of sanitary authorities.
II.—That the increased prevalence of small-pox in London from 1900 to 1902 was due to the gradually accumulating number of susceptible persons reaching such a proportion as to outweigh the advantage gained by the removal of the small-pox hospitals out of London.

In St. Pancras the procedure adopted in combating the epidemic followed this course: (1) discovery, (2) diagnosis, (3) notification, (4) inquiry, (5) removal, (6) disinfection, (7) contact notices, (8) personal disinfection, (9) vaccination, and (10) quarantining. As to vaccination, says Dr. Sykes, information could not in many cases be ascertained, neither could information as to vaccination and revaccination after the notification of small-pox be obtained from the late vaccination officers. This, continues Dr. Sykes, "once more demonstrated the wrongfulness of dislocating the measures for the prevention of disease and again justifies the resolution of the vestries and district boards of the metropolis passed at the conference held in the town hall, St. Pancras, on June 25th, 1896, that the Vaccination Acts should be administered by the authorities that administer the Acts and provisions for the prevention of the spread of infectious diseases." A further conference of metropolitan borough councils held at the Metropolitan Asylums Board on Feb. 7th, 1902, resolved, among other things, that all persons in a dwelling-house in which small-pox has broken out should be compulsorily vaccinated and revaccinated (if they have not been revaccinated within five years) and that the powers and duties at present vested in guardians of the poor with regard to vaccination and revaccination should be transferred to, and enforced by, borough councils. Our own opinion upon the matter has already been set forth with sufficient clearness in leading articles which appeared in THE LANCET of Oct. 25th, 1902

(p. 1138), and Jan. 10th (p. 110) and 24th (p. 249), 1903. This was that the Vaccination Acts should be administered by the county councils, except in London, where we held that the Metropolitan Asylums Board should undertake the duty. To whomsoever the duty of administering the Vaccination Acts may fall it is evident that there is a consensus of opinions that the guardians should have no more to do with it.

TREASURE SEEKING IN LONDON.

IT is an old and now, we think, an exploded legend that London streets are paved with gold. But we have come to the conclusion that there must be a variant of the legend and that instead of gold or treasure lying on the surface it must be considered to be under the ground. In no other way can we account for the persistent manner in which gangs of weary workers dig up the footpaths and roadways. Day after day they dig a hole, sometimes in the Strand, sometimes in Bedford-street, sometimes elsewhere. A newly paved or macadamised road seems to be considered as a certain sign that something valuable will be found underneath, for no sooner is the new surface completed than it is sure to be attacked. A hole is dug, the excavated material is turned over or sometimes carefully sifted through a large wire sieve, the hole is then filled up, and the diggers retire, generally with disappointment plainly written on their faces. Mindful, however, of Bruce and the spider and of the nursery rhyme—

> "If at first you don't succeed,
> Try, try again"—

they recommence their labours on the following day, having pegged out a new claim, and work away with a subdued energy which is piteous to behold. The procedure does not improve the condition of the streets; but, after all, who could be so churlish as to deprive his fellows of an occupation flavoured with the hope that one day something really valuable will turn up!

"THE NEXT-DOOR NEIGHBOUR."

THE good work done by the National Society for the Prevention of Cruelty to Children and the excellently judicious manner in which it is, as a rule, effected should by this time need little demonstration. For 13 years the society has steadily carried on a useful crusade against wanton cruelty or cruel carelessness in the homes of children. Not only has the society in this manner rescued for the nation many a child whose future could without its help have been nothing better than that of a helpless drudge or a stunted cripple, but also the educational effect upon parents themselves has reached a proportion which has conferred most substantial benefit upon the community at large. Anyone who has not realised this secondary effect of the society's work would do well to read a pamphlet with the above title written by the Rev. Benjamin Waugh and recently issued from the society's central office. Mr. Waugh selects several striking instances of the gratitude which a parent has subsequently expressed when by reason of the society's interference he or she has been changed from a careless or an actually cruel father or mother into a parent caring for and reaping the rewards of the care of his or her children. Persons, too, who would seek to charge the society with a meddlesome interference with a national liberty—the liberty of an Englishman to do as he pleases in his own home—should study the examples given in the pamphlet to show the justification for interference on the part of the society. Ghastly, indeed, some of these instances are as illustrating the depths to which ignorance and cruelty may lead a parent. The National Society for the Prevention of Cruelty to Children performs well a task which it is of the utmost importance to the State should be well performed and one which, as is shown in the pamphlet to which we refer, cannot be satisfactorily performed by the police. The good work which the society carries out requires widespread help and it needs no urging from us to induce our readers to contribute by their subscriptions or by their expressed approval.

GASTRIC SURGERY.

OF all the viscera of the abdomen the stomach is certainly the most important from a surgical aspect, and for this there are several reasons. In the first place the stomach is far more liable to morbid conditions remediable by operation than all the rest of the alimentary canal except the rectum, and no small part of the latter is without the abdominal cavity. In the second place the gastric wall is eminently well suited for operation, for it is far thicker than the wall of either the small or the large intestine; its mucosa, too, is but loosely attached to the deeper layers and it is therefore comparatively easy to pass stitches through the wall which shall traverse the serous and muscular coats without involving the mucous layer. As a result wounds and incisions of the wall of the stomach can, as a rule, be readily and firmly closed. These facts may serve to explain, in part at least, why the surgery of the stomach has attained so high an importance at the present time, and a paper by Mr. B. G. A. Moynihan of Leeds (which was read before the Royal Medical and Chirurgical Society and which is published at p. 294 of the present issue of THE LANCET) relating his own experience of gastric surgery, serves well to illustrate the remarks which we have made. Much of the importance of the surgery of the stomach is owing to the gastric ulcer, which occurs very frequently and which is capable of producing a large number of complications. Therefore the question of the methods of treatment of gastric ulcer and its results must form a large part of any consideration of the surgery of the stomach. Hæmatemesis is one of the most important conditions for the treatment of which the aid of the surgeon may be required and opinions have been very much divided as to the desirability of surgical interference in hæmatemesis. Mr. Moynihan draws a sharp distinction between hæmatemesis from an acute and from a chronic ulcer. For the treatment of the latter there is practically a consensus of opinion amongst those competent to judge as to the value of surgical treatment. On examination in such a case the hard thickened base and edges of the ulcer show that inflammatory processes have existed for months or years; the eroded vessel from which the hæmorrhage has come is firmly fixed by the inflammatory fibrous tissue so that it is unable to contract and to retract, and thus the chance of a spontaneous and permanent closing of the vessel is small indeed, and surgery can do much to assist. The ulcer may be excised by an elliptical incision round its base and the resulting wound closed by Czerny-Lembert sutures, or a gastro-enterostomy may be performed, and in a good proportion of the cases the results are satisfactory. How the gastro-enterostomy acts is not certainly known, but probably it is by giving physiological rest to the stomach. Excision and gastro-enterostomy may be combined, though the latter alone seems equally efficacious. Mr. Moynihan has had only one fatal case in eight operations for chronic hæmatemesis, and in that case the ulcer was excised but no short-circuiting was done. In hæmorrhage from an acute ulcer there is more diversity of opinion. Dieulafoy has advised that even in a first attack of hæmatemesis a surgical operation should be performed if as much as half a litre of blood is lost; not necessarily because he thought that surgery would probably be efficacious but because he had no other remedy to propose in so serious a condition. The practice, however, of early and indiscriminate operation in all cases of extensive hæmatemesis is steadily losing ground

and this for two main reasons. Death from hæmatemesis in cases of acute ulcer of the stomarch is certainly not a frequent occurrence. In many cases the hæmorrhage is not repeated or only a small quantity of blood is brought up later. This is a great objection to early surgical interference, for it is not very probable that the present low death-rate would be reduced. There is, however, another objection which is of even greater potency. In most cases when the stomach has been opened it has been found that the bleeding has come from numerous superficial erosions of the mucosa; in fact, so numerous may be the bleeding points that the whole surface has seemed to pour out blood. In such cases surgery has been able to do little. Inasmuch, then, as there is a great natural tendency to spontaneous arrest of the hæmorrhage, and the condition usually present is unsuited for surgical measures, it can hardly be disputed that the operation which is sometimes performed on these patients is itself an unnecessary and useless complication. In a small minority of cases it is true there may be found a single bleeding spot which may be seized and tied or the ulcer may be excised, but these cases are rare and it is not unlikely that the hæmorrhage would be both copious and recurring. In such cases Mr. Moynihan suggests that a rapid gastro-enterostomy would probably be the most suitable and successful method of treatment. For stenosis of the pylorus resulting from the cicatrisation of a chronic gastric ulcer two methods of treatment are now in vogue. Pyloroplasty, or the Heineke-Mikulicz operation, is undoubtedly very ingenious The narrowed pylorus is incised longitudinally and the incision is then sutured transversely so as to enlarge considerably the calibre of the passage. It is very efficacious in certain cases where the constriction is limited to a narrow ring and the ulcer is completely healed. These cases, however, are rare and the alternative operation of gastro-enterostomy gives such good results that it is probable that pyloroplasty will gradually fall into almost complete disuse. Mr. Moynihan performs gastro-enterostomy always by the posterior method of Hacker and employs only simple continuous sutures. He lays great stress on making the gastric incision obliquely from the greater curvature upwards towards the lesser curvature and the cardia and also on seeing that the anastomosed bowel lies in a correct direction, for he attributes the regurgitant vomiting, sometimes so troublesome after this operation, to a malposition of the anastomosing loop. If owing to adhesions it be found after anastomosis that the bowel is not properly placed, Mr. Moynihan prefers to make a second anastomosis or to perform Roux's "gastro-enterostomy in 'Y'." On preliminary sterilisation, so far as it is possible, of the mouth, stomach, and intestines much of the success of gastric operations depends, and attention to such precautions will probably do more to lower the death-rate of gastric surgery than the devising of new operations.

TRIUMPHS OF SANITATION.

AT a meeting of the Yorkshire Branch of the Sanitary Inspectors' Association held at Cleckheaton on Jan. 17th an interesting address on the Triumphs of Sanitation was delivered by Dr. C. H. Dyer, medical officer of health of Cleckheaton. The examples which he selected as illustrative were drawn from the history of plague, typhus fever, cholera, malaria, and tuberculosis. Of the first-named he said that there was perhaps no disease which in its history more strongly emphasised the contrast between ancient helplessness and modern resourcefulness. In 1665 it was prevalent in London and is supposed to have caused 68,000 deaths among a population of 460,000. In 1900 it again visited the British islands but London escaped altogether. In Glasgow 27 persons were attacked, with five deaths, in September of that year and many months afterwards four cases, in all of which the patients recovered, occurred in a large hotel adjacent to buildings in process of demolition from which rats were displaced. The difference in the experience of the years 1665 and 1900 was due mainly to the fact that in the latter year the four following precautions were observed: (1) vigilant control was exercised over shipping which arrived in the various ports; (2) patients and persons who had been in contact with them were isolated; (3) disinfectants were used in infected districts; and (4) rats were destroyed in great numbers. With respect to tuberculosis, Dr. Dyer quoted the late Sir Richard Thorne's statement that during the previous 50 years the mortality from phthisis had been reduced by 45 per cent. amongst adults, although unfortunately it had increased by 27 per cent. amongst infants. He then touched upon the benefits derivable from sanatorium treatment and passed on to the question of notification, stating that the Local Government Board had recently informed the Willesden district council that district councils already have power to make arrangements for voluntary notification of tuberculosis, to pay fees for such notification, and under the Public Health Act, 1875, to provide hospital accommodation for persons suffering from pulmonary tuberculosis.

THE MENTAL STATE OF THE CONSUMPTIVE.

THE psychology of the consumptive patient has a special interest to the general physician and to the psychologist. A symposium on this subject is published in the *Archives de Neurologie* for January. Dr. Felix Regnault in introducing the discussion of the subject said that the most salient psychological manifestations of early pulmonary tuberculosis are nervous hyper-excitability, optimism, egoism, and sentimentality. Though the victim of a grave malady the patient experiences no pain or suffering in the early stages of the disease. On the contrary he feels well and even buoyant, and when made aware of his malady he is not demoralised or downcast, because the feeling of organic well-being which is continually present within him deludes him into optimism. Moreover, the appetite for food is often excellent, and if the patient, yielding to the advice of friends, agrees to pass his time in a sanatorium the absence of worry or business anxiety also conduces to his happiness. Sexual hyper-excitability is, adds Dr. Regnault, characteristic of many tuberculous patients; these are not febrile or wasting cases but subfebrile cases marked by a very slight elevation of temperature not exceeding 1° F. When pulmonary tuberculosis develops in a person already suffering from another disease, such as myxœdema, the apathy and slowness characteristic of myxœdema are replaced by liveliness and excitability; the patient seems to exhibit a more intelligent interest in things than he did previously. Professor Jules Voisin, in continuing the discussion, stated that in his wards at the Salpêtrière he could discriminate patients with pulmonary tuberculosis from those with gastro-intestinal tuberculosis, as the former were generally bright and lively while the latter were not so. M. Berillon pointed out that it was in the prodromal and early stages of pulmonary tuberculosis that the signs of nervous hyper-excitability and of egotism were met with. At this stage patients were easily led by others, as the strength of will was deficient. The patient's mind was restless and vacillated from one project to another with great facility, but the power of application was lacking and success was seldom attained. This he would designate the stage of "hyper-suggestibility." A stage of egotism followed and in some instances this took an extreme and morbid form, so that the patient made a will bequeathing his fortune solely to the least reputable of his relatives or otherwise exacting conditions which could only be attributed to the testator's vanity. M. Lepinay stated that before the appearance of clinical symptoms of

pulmonary tuberculosis mental symptoms of a special kind could be detected which had a diagnostic value tending to the suspicion of impending tubercle. Phenomena of the same order—nervous and sexual hyper-excitability—had also been observed in certain animals. Thus in cows incipient tuberculosis was attended with morbid sexual excitement and depraved appetite, the animal acting like one in heat and also eating dirt and bits of wood. On killing the animal incipient tubercles could be found in the lungs. He had also noticed in dogs developing tuberculosis that from being gentle and affectionate they became snappish and irritable and showed abnormal sexual excitement. He regarded the process in animals as one of toxæmia affecting the brain and nervous system.

"STREET CAR COLDS."

IN THE LANCET of Jan. 17th, p. 208, appeared an account from the pen of our New York correspondent of the disgraceful overcrowding of street and elevated railway cars in the city of New York. The bulletin of the city of Chicago for the week ended Jan. 10th refers to a somewhat similar state of matters existing in that city.

"'Street car colds,' says the bulletin, are, in the experience of every physician in general practice, increasing with frightful rapidity. Pneumonia and bronchitis, as direct results, are endemic in every part of the city. Since the first of the year there has been a 22 per cent. increase in the deaths from these two diseases and, as compared with the first ten days of 1902, the increase is a little more than 41 per cent. Again the department urges that every able-bodied person shun the street cars, both surface and elevated, as far as possible. Especially should men, young and middle-aged, walk rather than ride in them any reasonable distance. This would make it possible for women, young and old, to have some chance of at least getting inside and so prevent others of them from collapsing from cold and fatigue on the overcrowded platforms. A brisk walk of two miles or less to his office in the present weather would be vastly better for every business man than a ride of the same distance in the mephitic, disease-saturated atmosphere of the average street-car.

The pathology of "a cold" is very uncertain, but there can be no doubt that a cold, whether it be real influenza or not, does lower the resisting powers of the organism. Foul air or air which has been breathed over and over again is a potent cause of headache, to say nothing of predisposing persons who breathe it to other complaints.

AMYOTROPHIC LATERAL SCLEROSIS.

Professor Joseph Collins of New York has published an important paper on the subject of this rare disease of the spinal cord in the New York *Medical News* of Dec. 27th, 1902. He states that he has met with only seven cases of the disease among 7000 patients seen by him at the Neurological Clinic of the City Hospital during a period of ten years. The symptoms and progress of the disease are illustrated by the following typical case which is cited by him. The patient was a woman, aged 37 years, who complained much of pain in the head and in the nuchal muscles. This was followed by a gradually developing atrophy of the muscles of the shoulder-girdle, neck, and hands and by a slight spasticity of the upper limbs. Babinski's great-toe phenomenon was observed to be present. There were early and marked symptoms of bulbar paralysis. The total duration of the symptoms was about three years, at the end of which period she died. The necropsy revealed the following conditions. There was a marked atrophy with disappearance of the nerve cells in the anterior cornua throughout the entire spinal cord, the change being most marked in the thoracic region. The cervical and dorsal segments showed a zone of degenerated nerve fibres encircling the anterior cornua and due to the degeneration of the nervous processes of commissural and columnar cells. The neuroglia was in a state of proliferation in the degenerated areas mentioned. The anterior spinal nerve roots were atrophied but the pyramidal tracts were intact. Thus, two systems of cells in the spinal cord were, says Professor Collins, affected by the disease—viz., the motor cells and the association cells—commissural and columnar cells. From a study of the literature on the subject Professor Collins was able to collect 11 cases of amyotrophic lateral sclerosis with necropsy in which the pathological process involved in their entirety both the systems of nerve cells above mentioned. He points out also that the disease might exist in its most typical forms without involving the pyramidal tracts. The affection was thus different from progressive muscular atrophy because of the different clinical course and anatomical changes. The etiology of amyotrophic lateral sclerosis was obscure. After a careful examination of the entire literature he had selected 94 typical cases and had added to these nine of his own, four of the latter being confirmed by necropsy. Of these 103 collected cases 54 were males and 49 were females. The fourth and fifth decades of life were found to be equally liable to develop amyotrophic lateral sclerosis. The average duration of the disease was two years, the minimum being a few months and the maximum nine years. The upper limb was affected first in 39 cases, the lower limb in 14, and both upper and lower limbs in 11 cases, while the disease commenced with bulbar symptoms in 21 cases. Traumatism did not, in Professor Collins's view, seem to be an adequate cause nor did overwork, including hard manual labour and exhaustion of special sets of muscles, as in gold-beaters, seem to enter into the etiology. The disease occurred mostly among the working classes. Six patients gave a history of syphilis, but this was probably not more than the actual percentage of syphilis generally prevalent in the class of patients at the Clinic. In the discussion following the reading of Professor Collins's paper at the meeting of the New York Neurological Society Dr. Bernard Sachs said that the disease was recognised clinically by the combination of spastic paraplegia with atrophic paralysis. He had seen many cases of "spinal cord syphilis with muscular atrophy" but he would not classify them as true amyotrophic lateral sclerosis. He held that there was a closer relation between progressive muscular atrophy and amyotrophic lateral sclerosis than Professor Collins admitted. Progress of the disease was, however, much slower in the ordinary type of the former than in the latter. Dr. J. R. Hunt cited a case of amyotrophic lateral sclerosis of very acute onset in which the necropsy revealed a degeneration of certain association tracts of the cerebral cortex and suggested that this was the anatomical basis for many of the mental symptoms observed in this case. In closing the discussion Professor Collins restated his belief that progressive muscular atrophy and the disease under discussion were different pathologically, clinically, and etiologically. He saw nothing in "abiotrophy" or the theory of a special vital defect in the nerve tissues, which had a bearing upon the pathogenesis of amyotrophic lateral sclerosis, as in the latter disease the process was probably an acute infection.

PAUPER ALIENS AND LONDON HOSPITALS.

Two questions which have been recently agitating the minds of correspondents of more than one daily newspaper are closely connected to an extent which the general reader is not at all likely to suspect and in a way which seems to have escaped the observation of the sagacious pressman. The questions to which we refer are those of alien immigration and of London hospitals. To anybody unfamiliar with the *clientèle* of a large general hospital in London the extent to which foreigners prevail there would provide no little surprise if he were to investigate the question. If such an inquirer were to spend a Saturday among the out-patients of an East-end hospital—the London Hospital, let us say, or the Children's Hospital in the Hackney-road—his surprise would amount to nothing

less than amazement. He would find himself surrounded by a crowd whose language was unknown to him, whose faces were strange, whose clothing was scarce, and whose odour was indescribable. In their midst he would find an interpreter, a man or at the Children's Hospital generally a woman, who has apparently at any rate an occasional familiarity with soap and water and a slightly more marked familiarity with the language of the country of these good people's adoption. The interpreter is present in order to express to the physician or surgeon the symptoms of the ailment for which his compatriot is seeking relief. The newspapers have remarked freely upon the amount of crime introduced into, and encouraged in, England by our system of unrestrained admission of immigrants. The sum total of disease which is similarly planted in London and the stress of work cast upon London hospitals in the same way are no less deplorable though they have received far less attention. From an educational point of view, no doubt, it may be a fine thing that our students and young physicians should behold the filth diseases, the infectious disorders, and the skin lesions of other countries. From the point of view of the general charitable public, however, who support the hospitals to which these pauper aliens are driven by their bodily misfortunes, it may give us some food for reflection upon the trite theme that "charity begins at home."

GONORRHŒAL ENDOCARDITIS.

GONORRHŒAL endocarditis is a complication of gonorrhœa which has received attention only in recent years and in foreign countries. In the *Johns Hopkins Hospital Bulletin* for October Dr. N. M. Harris and Dr. W. B. Johnson have reported the following case. A negro, aged 20 years, went to the hospital suffering from gonorrhœa on August 8th, 1901. About Sept. 10th he had a severe chill and headache. For the next week chills recurred sometimes twice daily. On Sept. 18th he was admitted. The heart sounds were feeble and the first sound at the apex was "murmurish." There was no discharge. The blood contained 50 per cent. of hæmoglobin and 3,820,000 red and 32,000 white corpuscles per cubic millimetre. Two chills occurred daily and were followed by profuse sweating and a rise of temperature to 105° F. On Sept. 22nd the first cardiac sound was replaced at the apex by a loud systolic murmur which rapidly increased in intensity. Visible pulsation appeared in the second and third left intercostal spaces and the shock of the second pulmonic sound could be felt. The heart's action became more irregular and the pulse more rapid. The number of red corpuscles fell to 2,368,000 per cubic millimetre and the hæmoglobin to 30 per cent. On Oct. 17th he became comatose and on the next day he died. The necropsy showed huge vegetations on the mitral valve, subacute nephritis, anæmic renal infarcts, and one splenic infarct. The gonococcus was cultivated from the heart's blood and the cardiac vegetations. On Sept. 24th and Oct. 4th 12 cubic centimetres of blood were withdrawn from a vein at the elbow and divided among four Erlenmeyer flasks each containing 150 cubic centimetres of bouillon to which from 20 to 30 cubic centimetres of hydrocele fluid had been added. The media remained sterile. Twenty-four hours before death the median basilic vein was exposed under cocaine and 12 5 cubic centimetres of blood were removed. This was divided between three tubes, each containing 10 cubic centimetres of melted agar, which was quickly plated. In 24 hours colonies of the gonococcus were produced. Dr. Harris and Dr. Johnson drew the following conclusions:—1. In order to cultivate the gonococcus from the blood during life it is not necessary to use much blood, to dilute it greatly, or to employ any specially prepared medium. 2. It is better to mix the blood with melted agar than to use fluid media in which the oxygen supply is more restricted. 3. The bactericidal power of the blood in inhibiting the growth of the gonococcus is slight compared to its effect on the typhoid bacillus and the pneumococcus.

MATTER IN SUSPENSION.

IT is rarely that suspended matter in air or in water fails at length to subside, but the process may be slow or it may be rapid. In either case the act of subsidence effects purification. The condition of the London streets after a persistent dense fog is well known—the pavements are covered with a greasy grime, the impurities of the air, oily soot, and tarry bituminous particles, combining to make a slippery pasty mass. This mass possesses a remarkable and objectionable bacteriology as well as chemistry which during the existence of the fog belonged to the air. In this manner a fog may exercise a distinctly purifying effect upon the air. A fine rain produces a similar result and when the shower is ended the air is freshened and clean. In the same way bright clear water, that has been just recently muddy, is probably pure for drinking purposes, or at any rate it will be found to be absolutely free from bacteria. Matter in suspension would thus appear to be endowed with a function of importance to the health of the community which is not generally considered, and, if we only knew, there might be occasions when we should be grateful for a muddy river, a foggy day, or a persistent drizzle. The effect of rain upon the air, however, is probably chemical as well as mechanical—that is to say, the air is not only "scrubbed" but it is "braced up," so to speak, for after a shower it possesses an added freshness which is possibly due to the formation of peroxide of hydrogen and in some cases even of ozone. The mechanical effect of suspended matter in the act of subsidence is none the less an important function, for at the same time poisonous particles clinging to it are removed. The subsidence of suspended matter therefore signifies an act of purification accomplished. The principle involved is much the same when the soldier cleans his accoutrements with pipe-clay. There is little doubt that just as water is purified, and even sterilised, by sedimentation, the whole of the microbes being carried down with the sediment, so by raising a cloud of dust in the air some degree of bacterial purification would be accomplished. Otherwise, dust would be free from micro-organisms, whereas an ounce of it contains, roughly, about ten thousand million of them.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

A COMPLIMENTARY dinner will be given on Feb. 11th by members of St. George's Hospital Medical School to Mr. Herbert W. Allingham, Dr. Frederic W. Hewitt, Dr. Arthur Latham, and Mr. William West. This is to celebrate the fact that during the past year Mr. Allingham was appointed surgeon to His Majesty's Household and surgeon-in-ordinary to the Prince of Wales; that Dr. Hewitt as anæsthetist to His Majesty was intrusted with the responsibility of administering an anæsthetic to him; and that Dr. Arthur Latham, in conjunction with Mr. West as architect, gained the King's first prize for an essay on the construction of a sanatorium for the treatment of consumption. Mr. West is also honorary deputy treasurer of St. George's Hospital. During the last 12 months, also, Sir William Bennett and Sir Isambard Owen received their knighthoods, Sir Francis Laking, visiting apothecary to St. George's Hospital, became a baronet and a G.C.V.O., and Mr. Wentworth Tyndale gained the C.M.G. for medical services in South Africa. In addition to these honours St. George's Hospital supplied in Dr. E. G. Graham Little and Dr. S. Vere Pearson new members

to the staff of St. Mary's and the Shadwell Hospitals respectively and medical registrars to the London and Westminster Hospitals, so that this hospital may well claim that in spite of comparative smallness of the number of students at any rate the quality of the work done at Hyde Park Corner and of the medical men educated there successfully rivals that of the other schools in the metropolis.

IMPUDENT QUACKS AND THE NAME OF THE LANCET.

Messrs. Madon, Sons, and Co., chemists and druggists, 16, Abdool Rhaiman-street, Bombay, who are not known to us, have asked our permission to say that they have no connexion with the firm of M. T. Madon and Co., of whom in our article of Dec. 13th, 1902, we had cause to complain.

MEMORIAL TO PROFESSOR JOHN YOUNG.

WE are requested to state that steps are being taken to raise a memorial to the late Dr. John Young, professor of natural history in the University of Glasgow, and that a committee of about 60 members has been formed for the purpose of carrying out the intention. The committee is very desirous that all old friends and pupils of Professor Young should have this matter brought to their knowledge so as to give them the opportunity of contributing if so disposed. It is intended that the memorial shall be identified with the Hunterian Museum (founded by Dr. William Hunter) in Glasgow University and that it shall include a likeness of Professor Young. Contributions will be received and acknowledged by the treasurer, Mr. Archibald Craig, 156, St. Vincent-street, Glasgow. The committee would like to close the list in a very few days.

THE NEW HOSPITAL AT MONACO.

A MEDICAL correspondent residing at Monaco writes that owing to the enormous development of Monaco in recent years it was found that the old Hôtel Dieu on the rock of Monaco was insufficient to meet the demands of the place. As soon as the Prince recognised the need he took the matter in hand with his usual largeness of ideas and appointed a commission composed of medical men and architects, with Dr. Colignon at their head, to make a tour of inspection of the great modern hospitals of Europe. In the building that has been erected for the new hospital is to be found nearly every novel and perfect idea that could help to realise the Prince's directions to the commission, "I desire a model hospital." Our correspondent continues as follows:—

> Situated on the western frontier of the principality, some 300 feet above the sea, protected by the precipitous cliffs of the Tête du Chien from the north-east to the north-west and fully exposed to the Mediterranean, the hospital is approached by broad, gently sloping terrace roads through woods of olive, caroub, and eucalyptus and these have been added to by the planting of palm trees and other sub-tropical plants. The principle of separate blocks has been adopted as the one most suited to carry out to the fullest extent hygienic conditions. A very handsome broad passage way runs the entire length of the blocks of buildings, forming a means of communication between them and also a covered promenade for convalescents in wet or very hot weather. From this gallery are obtained magnificent views over Monaco, the Italian coast, and the Mediterranean.

Here he enumerates various structural details which have already been described in THE LANCET of April 26th, 1902, p. 1212, and he concludes as follows:—

> It is under consideration to allow foreigners to be attended by their own medical men subject, of course, to certain restrictions. The Emperor Napoleon built his grand opera-house in Paris first and his great hospital afterwards. The Prince of Monaco, although deeply interested in the magnificent marine museum in course of construction, has made his hospital his first care and thought. It has now been open and in full work for over six months and has been an enormous boon not only to his own subjects but also to the very large population in the surrounding French and Italian districts.

His Highness the Prince of Monaco has hitherto been known to science by his valuable researches in marine biology, but by the munificent gift to the principality which is described by our correspondent he has shown himself no less eager to promote the comfort and well-being of his fellow creatures, whether by offering them the means of care in sickness or by providing methods for the prevention of disease. It is to be hoped that the concession alluded to by our correspondent will be carried out and that foreigners will be allowed to have the option of selecting a medical attendant of their own nationality during their stay in hospital.

THE TEVERSAL DISPUTE.

IN an article entitled "The Organisation of the Profession" which appeared in THE LANCET of Dec. 6th, 1902, p. 1579, our Special Commissioner narrated the position of affairs in Nottinghamshire in accordance with statements made to him by certain officials of the Midland Medical Union and others. Immediately the article appeared we received a letter informing us that during that very week an investigation had been held at which delegates appointed by the Midland Medical Union had investigated certain charges of unethical conduct formulated against Dr. Crawford and Mr. Farman, and found those charges untrue. We immediately inserted in our columns an acknowledgment of the error that we had been betrayed into, expressing our extreme sorrow for the pain that our article must have given to Dr. Crawford and Mr. Farman, and making our reparation as public as possible. The incorrect article was written in completely good faith upon what we believed to be trustworthy information and our readers will have no doubt that what we wrote was written solely on public grounds and will acquit us of the slightest intention to wrong any individual. From communications that we have since received through the Medical Defence Union we have learned that a more explicit statement concerning the situation would be agreeable to Dr. Crawford and Mr. Farman who have been wrongfully accused of unethical conduct and who desire that their exoneration from all the charges brought against them shall be as public as possible. There need be no hesitation on our part in giving Dr. Crawford and Mr. Farman the further satisfaction that they seek from us. By the courtesy of Dr. Bateman, secretary of the Medical Defence Union, we have been placed in possession of all the facts that were elicited at the investigation held before the delegates of the Midland Medical Union, Dr. Bateman being present. During that conference it became perfectly clear that Dr. Crawford and Mr. Farman had not ousted anyone from appointments. They accepted appointments *which were vacant at the time that they did so*, those appointments having been duly resigned or refused by the previous holders thereof. This is beyond dispute. The result of this conference was published in THE LANCET of Dec. 20th upon information forwarded to us by the Midland Medical Union, which has never communicated any details to us of the proceedings or, so far as we know, made any attempt to explain the manner in which it accepted the charges as true. We repeat our regret that we should have been betrayed into giving circulation to vague and baseless accusations against Dr. Crawford and Mr. Farman. The story as we told it reached us in such a circumstantial form that we considered it our painful duty to publish it: we now have the pleasant duty of withdrawing it *in toto*.

SERUM-THERAPY OF TYPHOID FEVER.

PROFESSOR CHANTEMESSE has published in *La Presse Médicale* some striking results arrived at by him by the use of an anti-serum in typhoid fever.[1] The serum is prepared by injecting a horse with a typhoid toxin obtained by

[1] La Presse Médicale, Nov. 20th, 1901, and Dec 24th, 1902.

cultivating the typhoid bacillus in a special medium consisting of an emulsion of spleen and bone marrow. The amount of serum given is not large; during the first fortnight, if the patient's condition is satisfactory, a single injection of from 10 to 12 cubic centimetres often suffices to abort the attack. If, however, at the end of from eight to ten days after the first injection pyrexia continues a second injection is made of four or five cubic centimetres in a mild case or of ten cubic centimetres in a severe one. The effect of the injections in reducing the temperature is strikingly illustrated by the charts which accompany the first paper. As regards the influence of the treatment upon the case-mortality Professor Chantemesse is careful first to point out how widely the mortality varies in different epidemics. But taking statistics for the various hospitals of Paris from April 1st, 1901, to Dec. 1st, 1902, of 1193 cases admitted and treated in the ordinary way 286 died, a case-mortality of nearly 24 per cent., while of 186 cases treated with the serum during the same period seven only died, a case-mortality of 3·7 per cent. The serum is stated to be both antitoxic and anti-microbic but to act especially by exalting phagocytic activity.

A provincial sessional meeting of the Sanitary Institute will be held at the Municipal School of Technology, Sackville-street, Manchester, on Saturday, Feb. 7th, at 11 A.M., when a discussion will take place on the Removal and Isolation of Infective Patients in Populous Districts. The chair will be taken at 11 A.M. by MR. A. WYNTER BLYTH, chairman of the council of the Sanitary Institute, and the discussion will be opened by Dr. Meredith Young, medical officer of health of Stockport.

DR. A. S. F. GRÜNBAUM has been appointed director of the cancer research for which, as our readers are aware, Mr. Sutton Timmis of Liverpool has recently generously initiated a fund by a donation of £10,000. The work is to be carried on at Liverpool in connexion with the University College and with the Royal Infirmary.

UNDER the will of the late Mr. Robert Reeves Storks a sum of £20,000 has been bequeathed to King's College Hospital to found, endow, or provide for the maintenance of a ward in memory of the testator's father. Owing to other provisions in the will it is probable that the hospital will receive altogether about £60,000.

WE understand that Sir William Turner's appointment as Principal of the University of Edinburgh will not prevent him from presiding over the General Medical Council. Sir William Turner has resigned the professorship of anatomy which will relieve him of all teaching duties.

THE London County Council has decided that the provisions of certain sections of the Public Health (London) Act, 1891, shall be made to apply to measles.

THE Twenty-first Congress and Exhibition of the Sanitary Institute will be held at Bradford, commencing on July 7th, 1903.

DONATIONS AND BEQUESTS.—Under the will of Mr. J. S. Townsend of Sevenoaks the Children's Hospital, Great Ormond-street, and the Brompton Hospital each receive £200.—Under the will of Mrs. Sarah West of Streatham Hall, Exeter, the Devon and Exeter Hospital will receive £100; the Exeter Dispensary, £100; the West of England Institution for the Instruction of the Deaf and Dumb, £100; and the West of England Infirmary for Diseases of the Eye, £100.

THE INTERNATIONAL MEDICAL PRESS ASSOCIATION.

A LETTER from the chairman of the provisional committee of the British Medical Press Association will be found in our present issue, p. 330. The purport of this communication is to invite all whom it may concern to participate in the work of international organisation. This is the more appropriate as the time is approaching when a third effort will be made to unite the medical press of the world. It will be remembered that this idea was first launched when the International Medical Congress met at Rome and that the matter was then referred to the next congress which was to be held at Moscow. Nothing, however, was done on that occasion, but in 1900, when the French Government assisted so many congresses to meet in Paris during the Universal Exhibition, an International Congress of the Medical Press was organised. We described at some length the debates held and the resolutions carried on that occasion.[1] The general principle that an international association of the medical press should be formed was unanimously approved, but there was not the same unanimity when attempts were made to define what was meant by the term "medical press." Indeed, this involved so many complex and delicate questions that it was felt that the matter should be discussed at a conference of delegates specially elected for the purpose by the national medical press associations of their respective countries. Some difficulty and delay were experienced in bringing about this conference but these obstacles were finally overcome. Prince Albert I. of Monaco offered to receive the members of the conference in his principality and to give them all the facilities necessary for the accomplishment of their task. Consequently, 28 delegates, representing 11 different national medical press associations, met at Monaco from April 7th to 9th last year. They were, as we related at the time, admirably received and entertained.[2] Further, they were able to accomplish the task for which they had met, and this was no easy matter. It had been decided at Paris to form an international association of the medical press but the delegates at Monaco had to draw up the rules or statutes of this association. In Paris a very ardent debate had been held as to what constituted the medical journal and the medical journalist. Was a journal to be represented as a printing and publishing business or as a scientific and literary work? In other words, Was the association to be a business or a professional organisation? To answer this question was all the more difficult as it sometimes happens, especially on the continent, that both phases are embodied in one and the same person; an editor may also be the proprietor and publisher of his paper. However, the matter was decided in favour of the professional aspect of the question. Each nation has, or should have, its association of the medical press and this organisation is the best judge as to those who are suitable representatives to attend the international meetings and congresses. But where such a national organisation does not exist a medical journal may appoint as its representative to the international association its editor, sub-editor, or "scientific director." It may send three such representatives to an international congress though it cannot have more than one vote. But in all cases it is the scientific and literary side and not the commercial aspect of medical journalism that is to be represented at, and to form part of, the international association.

The members of the International Medical Press Association are to respect the conventions for the protection of literary copyright, to facilitate exchanges of publications, and to pay their subscriptions to the international treasurer. For the current year this subscription only amounts to 60 francs per nationality. Of course there has been but little to do and therefore not much need for money. It will be some time before the members are sufficiently acquainted with each other's views and aspirations to be able to make some distinct attempt to improve the position and standing of the medical press and to take practical action. The International Medical Press Association is governed by a permanent committee consisting of the members who were

[1] See THE LANCET, August 4th (p. 347), 11th (p. 454), and 18th (p. 520), 1900.

[2] See THE LANCET, April 19th, 1902, p. 1130.

present at the Conference at Monaco, but this committee retires at each general assembly or congress. These congresses are to be held a few days before the International Medical Congress and in the same town. Therefore as the Fourteenth International Medical Congress is to meet at Madrid from April 25th to 30th this year the Congress of the International Medical Press Association has been convoked in Madrid from April 20th to 22nd, and then a new permanent committee will be elected. This committee itself appoints its bureau or executive. The executive consists of a president, three vice-presidents, a general secretary, and an assistant secretary who is also to act as treasurer. The headquarters of the association are fixed at Brussels and the assistant secretary and treasurer must reside in that town. This post is now held by Dr. Péchère, 140, Rue de la Loi, Bruxelles. The general secretary is Dr. Raoul Blondel, 8, Rue de Castellane, Paris. The president is Professor V. Cornil, 19, Rue St. Guillaume, Paris; Dr. Laborde, Dr. Lucas-Championnière, and Professor Charles Richet are the vice-presidents. The permanent committee and the executive which it elects will meet in the towns where and when the international medical congresses are held. But during the years when there are no such congresses they will meet at the headquarters of the association—namely, at Brussels. It is the mission of the permanent committee to convoke the general assemblies or congresses of the entire association, and such congresses should be held at least as often as the international medical congresses are held. Consequently, the next International Congress of the Medical Press is now convoked to meet at Madrid from April 20th next to the 22nd. The members will enjoy the same privileges as the members of the International Medical Congress. They must pay an entrance fee of 25 pesetas, or £1, and may speak in Spanish, French, German, English, or Italian. All members of the Congress will receive the volume containing the report of the proceedings. Papers to be read at the Congress should be sent to the general secretary before March 31st, and members intending to be present should notify the fact to the general secretary before April 15th. The president of the Spanish committee intrusted with the local organisation of the Second International Congress of the Medical Press is His Excellency Dr. Cortezo, member of the Royal Academy of Medicine, member of Parliament, ex-Director-General of the Public Health Department, and correspondent of the *Siglo Medico*. All requests for information should be sent to Dr. Larra Cerezo, 17, Leganitos, Madrid, editor of the *Médicina Militar Española*.

On assembling at Madrid the permanent committee must be elected by the Congress and this committee must then proceed to elect its executive committee or bureau. The executive when appointed must at once see to the organisation of all necessary facilities for the press representatives at the International Medical Congress which will commence on April 25th. This is one of the most practical and immediate services that an international press association can render. It is evident that if the individual representative of a journal when he reaches Madrid finds that he cannot procure the necessary facilities to accomplish his mission his protests and his requests may be but as a voice in the wilderness of the confusion due to the rush of a great congress. But in the executive committee of the International Medical Press Association he will find a body of journalistic experts who will at once understand and appreciate the importance of his claims and demands and will possess the necessary influence to transmit them to the proper quarters. There is also the difficulty of languages. Everybody is not able to speak Spanish and the executive will help in regard to interpretations. In a word, medical journalists will no longer be isolated individuals but will have an international and representative organisation to help them in moments of difficulty. Year by year, as experience accumulates, the utility of the international association will become more and more evident. For instance, there is already a rule on the statutes constituting the executive and the permanent committee the arbitrator in regard to disputes that may arise between journals of different nations accused of infringing the convention relating to literary property. But to return to the medical congresses, the International Medical Press Association is to help in organising the reporting of the proceedings of international scientific and medical congresses. For this purpose the association of the medical press of the country in which the congress is to meet should have some of its representatives on the committee that is organising the congress. These press representatives should enter into communication with the general secretary of the Medical Press Association and communicate all information and documents that may be of use. If this were to be done it will be seen that the interests of the medical press would not be neglected, as sometimes happens, because there is not any authorised person to make the organising committee managing a congress understand what is required and what is necessary. Again, a medical journalist who is a member of the association has centres where he can make himself known and where he can receive advice and help in Austria, Bohemia, Belgium, Denmark, England, France, Germany, Holland, Italy, Norway, and Spain. Other nations will join in due time and thus international intercourse and exchange of thought and information will be greatly facilitated.

In the establishment of such international organisations there has always been a great difficulty because of the unequal representation of the interests involved at the different congresses. A vote by show of hands is, of course, the readiest and simplest method, but it is most unfair at international congresses. For instance, at Madrid the number of Spanish medical journalists present will be so much larger than the delegations from other countries that a division taken by show of hands would give to the Spanish medical press a voting power altogether out of proportion with its importance when compared with the medical press of other countries. A vote by show of hands always gives a preponderating influence to the nation where the congress is held. Consequently, at many international congresses the nationality vote has been introduced—namely, each nation represented has one vote and the majority of the delegates of that nation decide how that one vote shall be given. But this is not fair, though perhaps an improvement on the mere show of hands. It does not, however, allow minorities within nationalities to give expression to their opinion and it puts all nations on a footing of absolute equality. It is manifestly absurd that on a division such countries as Greece, Bulgaria, and Servia should be equal in voting power with England, France, and Germany. At the Conference at Monaco this difficulty found at least a partial solution in the proposal brought forward by the English delegation and adopted. The proposal was to give each nationality not one vote but an uneven number of votes, so that the opinion of the majority might be recorded, but not to the complete exclusion of the opinion of the minority. Then a rough attempt was also made to differentiate between the large and the small nations. Therefore the large nations, such as Austria, England, France, and Germany, will have five votes and the smaller nations, such as Belgium, Denmark, and Holland, will have three votes. Thus, when a question is put to the congress, each national delegation will vote separately and then divide its congress vote in proportion to its own internal divisions. For instance, if there are ten English members at the Congress at Madrid and on a motion eight English vote for and two against a proposition, the five votes England has the right to record would count as four for the motion and one against. No other international congress has yet attempted to obtain a proportionate representation both of nations and of minorities. In this respect the medical press sets an example to the world and this is due to the initiative of the English section.

CHOLERA IN THE TURKISH EMPIRE.

(FROM THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH.)

THE continued presence of cholera in Palestine and the fact that it has not wholly disappeared from Alexandria are disappointing, and to a certain extent disquieting, facts. There was good reason to hope that the disease would disappear altogether in the cool winter months and there is still a possibility that it may completely die out during the next few weeks. But should it not do so it is impossible not to feel some apprehensions that it will again become seriously active when the warmer weather of spring sets in.

The following is a summary of the behaviour of the disease since my last letter appeared in THE LANCET.[1] At Lydda,

[1] THE LANCET, Nov. 22nd, 1902, p. 1414.

near Gaza, the outbreak lasted until Nov. 24th. For the size of the village this outbreak was of very great severity. In Gaza the disease died out at about the same time. In Jaffa, where at one time 30 or more cases were officially reported daily, the last case was recorded on Dec. 27th. It is difficult to estimate what has been the total mortality from cholera in these places. It is admitted that the official returns must be considerably below the truth. Thus in Gaza one trustworthy authority has placed the total mortality at from 40 to 50 per cent. higher than the official returns would make it. A local practitioner estimated the deaths here at one time at 150 per diem. This is probably above the truth, but it was ascertained by watchers at the cemeteries that in the three weeks ending Oct. 18th, Oct. 25th, and Nov. 1st, as many as 392, 830, and 513 interments respectively took place in the daytime and it is believed that many other bodies were buried at night.

At Lydda the cases and deaths up to the middle of November were estimated at 1000 and 600 respectively. The infection was thought to have been originally imported there from Gaza by the inhabitants of the latter place who flocked to Lydda in large numbers to gather the olive harvest.

At Tiberias an estimate made at the end of November placed the mortality from cholera at 500 and the number of cases at about 700. A good deal of suffering was caused there by the difficulty in obtaining supplies and provisions and particularly by the scarcity of fuel for the purpose of boiling the drinking-water.

A large number of villages both in the Jaffa and Gaza neighbourhood and in that of Tiberias were invaded by the disease. How many villages were attacked and how many persons died in them will perhaps never be known, but in some villages it was reported that as many as 100 deaths a day were occurring at the height of the epidemic.

The same uncertainty prevails as to the extent of the outbreak to the east of the Jordan. Among the earliest cases there were three which occurred at Hatem at the end of October. Hatem is a village in the *caza* of Ajlun, at no great distance from Muzerib, the terminus of the Hauran railway. The first patient, a man, had recently arrived from Tiberias. His death was soon followed by that of his wife and child and later by a large number of others. About the middle of November a considerable number of deaths from cholera were reported to have occurred among the labourers on the new Hedjaz railway at Amman. The disease appeared also in Salt, Bardja, and other places to the east of the Jordan, and caused a certain amount of mortality. If the official figures may be accepted as even approximately accurate the outbreak to the east of the Jordan has been less severe than that to the west. In many villages in the *sandjak* of Jerusalem the mortality was at one time excessively high. Thus at Yahoudié 250 deaths from cholera were admitted to have occurred; at Kaferana, 184; at Sheikh-Mouenne, 90 deaths (out of only 250 inhabitants); at Roubab, 250 deaths; and at Jemran, 80 deaths.

In Jerusalem itself the first case of cholera is said to have occurred on Nov. 14th, a second followed on the 16th, and a third on the 18th. They were all fatal. There have since been occasional cases there but Jerusalem has escaped a serious epidemic. At Jericho about a score of cases in all have been reported. The most northerly point yet reached by the disease has been Damascus. The earliest case there seems to have been that of an Italian labourer employed in the construction of the new railway to the Hedjaz. He went to Damascus from Amman and died on the morning of Nov. 22nd. The symptoms and post-mortem appearances were held to justify the diagnosis of cholera, although cholera bacilli were not found in the dejecta. A little later two women were attacked by the disease and in the latter half of December there could no longer be any question that cholera was present in Damascus. From five to 20 cases were being reported daily, and at the time of writing the disease is still causing from five to 10 deaths there each day. It will probably be shown later that there, as elsewhere, the official returns are considerably below the truth.

During the past week the official bulletins have made mention of no other places than Damascus and Nablous and it is justifiable to hope that the disease is extinct, at least for a time, in other parts of Syria and Palestine. From the beginning of the outbreak down to Jan. 20th the number of deaths officially ascribed to cholera has been 3668, but it would seem probable that the true mortality has been considerably higher and possibly not less than 5000.

The epidemic of cholera in the Yemen province in Arabia, in the neighbourhood of Hodeidah, became extinct about the end of October or the beginning of November. But in the second week of November a serious outbreak of the disease was reported from Midi, on the Yemen coast. It was particularly severe among the Turkish troops stationed there, and up to Nov. 16th as many as 150 fatal cases were said to have occurred amongst them. The deaths of two officers from cholera were included in this figure.

The extent of the outbreak of cholera in the Assyr province last autumn is not known with accuracy, but it was probably of considerable severity. A report has been recently received, dated some time in October, stating that up to that time over 350 cases and over 200 deaths had occurred in Mihail alone.

The flow of pilgrims to the Hedjaz has already begun and large numbers are constantly arriving in Constantinople and embarking either on pilgrim ships which go direct to the Red Sea or on ordinary steamers which carry them only as far as Alexandria. It is too early yet to form an opinion as to the probable size of this year's Haj. Last year the removal by the Russian Government of the prohibition of the pilgrimage from Russian territory led to an immense increase in the number of pilgrims from Bokhara and other parts of Central Asia. This year the Government of India has decided to allow, for the first time since 1897, the departure of pilgrims from all parts of India whether plague be present there or not, and has reopened the ports of Bombay and Karachi as ports of departure for pilgrims. The removal of these restrictions may be expected to lead to a considerable increase in the number of pilgrims leaving India for the Hedjaz, and the pilgrimage of 1903 will possibly be even more largely attended than was that of 1902. Very strict precautions are in force to prevent the reintroduction of cholera into the Arabian ports, whether from Egypt or elsewhere, but the chances of the reappearance of the disease in the Hedjaz during the next few months are obviously considerable.

Constantinople, Jan. 22nd.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR THE YEAR 1902; PART II., TABLES.

THE Chief Inspector of Factories has this year adopted the plan of publishing the tables connected with his department in the form of a separate volume. Part I. of his report was issued some months ago and has been already noticed in THE LANCET.[1] In the present volume the statistical tables are preceded by an introduction which briefly explains their import. A full list is given of the names and addresses of the inspectors of factories and of their assistants, of the distances they have travelled, and of the cost of their journeys and expenses. In this connexion it may suffice to say that the total number of miles travelled by conveyance was 759,880 and the expenses thereby incurred were £10,295 13*s.* 4*d.*

A map is given showing the divisions into which Great Britain is partitioned for the purpose of carrying out the provisions of the Factory Act and there is a table which gives the "geographical unit" of each district, a list of the principal industries which are carried on in it, and the names of the district and other inspectors who have charge of each area. A first glance at this table may give little indication that it contains anything of general interest, but considered in the light of a knowledge of diseases engendered by the industries under the control of the Factory Act the geographical distribution of the trades is important in its effects on the health of the people engaged, and the information here found is of value, also, in showing that in many cases the determining cause of the locality chosen for certain industries is the effect of the geological formation of the country.

Great Britain and Ireland are portioned into 42 districts, of which two are situated in Wales, five in Scotland, and two in Ireland. England and Wales are partitioned into four great "divisions": (1) the southern which embraces

[1] THE LANCET, August 23rd (p. 548), Sept. 6th (p. 695) and 13th (p. 766), 1902.

the district south of a line from the Wash to the Severn; (2) the Midland which includes Wales on the west, Lincolnshire on the east, and the greater part of the area which lies between; (3) the North-Eastern which comprises Northumberland and Yorkshire; (4) the North-Western which includes Cheshire, Lancashire, and Cumberland; and a fifth, the "Scotland and Ireland," includes those countries. Each division is subdivided into districts, of which there are 10 in the Southern, 11 in the Midland, six in the North-Eastern, eight in the North-Western, and seven in the Scotland and Ireland division. In the Southern division four districts are named after the capital—North, South, West, and East London—but the northern district includes Hertfordshire, the southern Surrey and Sussex, the western Berkshire, Buckinghamshire, and Oxfordshire, and the eastern Essex. From this it is evident that in very great part the London districts are really rural. The industries of London which come within the purview of the Factory Act are many; they include letterpress printing, lithographic printing, bookbinding, tailoring, dressmaking, sawmills, laundries, docks, wharves, marine engineering, the manufacture of white lead and paints, colours and varnishes, and building operations. It might be difficult to name a trade which is not carried on in London, but the list given above contains some of the principal industries.

The county of Kent is rich in fruit and a large quantity of jam is made there; a considerable amount of stone is also quarried. The Southampton district, which includes Dorsetshire and part of Wiltshire as well as Hampshire, is mainly agricultural, but there are factories for nets and ropes, the shipbuilding trade flourishes, and there are some stone quarries. In the Plymouth division, which includes Cornwall and Devonshire, shipbuilding is extensively carried on, marble and granite are quarried, and there are a great number of potteries. The Bristol division includes part of Wiltshire, Somersetshire, and Gloucestershire. The chief industries are wool-spinning and weaving, and the manufacture of chocolate, cocoa, and tobacco. Somerset has large bacon factories. The Northampton division includes Huntingdonshire and Bedfordshire. The chief factories there are for the manufacture of boots and shoes and of the leather from which they are made. The Norwich division includes Norfolk, Suffolk, and Cambridgeshire. At Norwich silk is still woven, and the "manufacture" of mustard, of boots, and of machines are amongst the staple industries. Lowestoft and Yarmouth, as everyone knows, are great centres of fish-curing.

The Midland division includes Birmingham, Worcester, Wolverhampton, Staffordshire, Leicester, Nottingham, Lincoln, and Wales. The Birmingham industries embrace the galvanising and "finishing" of metals, founding and converting metals, the making of appliances, tools, and machines, of jewellery and watches, of arms and ammunition, and of pins, pens, and electro-plate. Worcester is chiefly celebrated for its long connexion with the manufacture of china, but gloves, pins, and boots are now extensively made there. There are also brick and tile factories and, moreover, some natural products other than clay which are found in the district and utilised; for example, salt is prepared. The county is rich in fruit and cider is made in considerable quantity. Wolverhampton is chiefly celebrated for its iron mills. North Staffordshire includes the "Potteries"—the great centres of the earthenware and china trades. The chief industry of Leicester is the making of boots, shoes, and hosiery. Nottingham is famous for its machine-made lace. Lincolnshire contains much rich agricultural land and the factories of Lincoln include many for the making of implements for its tillage. Manchester, Oldham, Rochdale, Bolton, Blackburn, and parts of Cheshire are chiefly devoted to the manufacture of cotton goods. The dominant industry of North Ireland is the spinning of flax.

The effects on health of many trades are at length not only well recognised by medical men but are also becoming generally known to the public at large. It is obvious that no local tables of mortality can be considered complete unless the effects of the occupations in which the population is engaged are taken into account. The way in which some industries have left certain districts and gone to other parts of the country while others have remained stationary is a subject of much interest and also one of considerable complexity. It is not one concerning which much need be said here, but it may not be out of place to indicate some of the causes which have brought it about. It is, of course, obvious that in the case of quarries of stone the work must be carried out where the stone is found. It might be supposed at first sight that the same was true in regard to the manufacture of china, but this is not universally the case. Much of the fine china clay is at the present time transported for manufacture elsewhere, but in the case of the coarser kinds of pottery and brick- and tile-making the work is done where the clay is found. In regard to some other trades which it might be supposed could be carried on equally well in any part of the country, it is interesting to observe how some of them have lingered on in the districts into which they were first introduced. Norfolk was originally a great centre of the weaving business, first because the Flemings who settled there brought their craft with them. Silk is still spun in Norwich, but Worstead, which gave its name to a thread, is now a small village, retaining only its splendid church as a memorial of the past. Bristol was at one time the chief port of the country and still holds a prominent position in the preparation of tobacco and thus preserves its historic relations with the New World. The iron industry of the Weald practically ceased when the timber of the forests was used up and the trade, like so many others, was attracted to the north, to the neighbourhood of the coal-fields.

MEDICINE AND THE LAW.

An Action by the Society of Apothecaries.

AT Bow county court on Jan. 14th John Charles Pardore, a herbalist, was sued at the instance of the Society of Apothecaries for the recovery of a penalty, under the twentieth section of the Apothecaries Act of 1815, for acting or practising as an apothecary without qualification to do so. The facts of the case itself present no new or unusual features; it was shown that Pardore had attended the patient who had died and upon whom an inquest had been held, and evidence was given that she had believed him to be a medical man. In these circumstances the learned county court judge gave his decision in favour of the Society of Apothecaries for the amount of the penalty claimed (£20), with costs on the higher scale, but a point of law which was raised on behalf of the defendant and not decided deserves comment. The defendant's counsel urged that his client's practice as a herbalist in the case in question was permitted by the third section of 34–35 Hen. VIII., c. 8, an Act of Parliament which, strange as it may seem, has never been expressly repealed. It has been argued with regard to it that the Apothecaries Act, 1815, must be taken to have repealed it by implication, but this point does not seem to have ever been taken to any court of appeal so as to obtain an authoritative decision upon the subject. In the case of Pardore it was apparently suggested that the deceased shivered when she consulted the herbalist, and that therefore she suffered from ague, which the herbalist was permitted to treat by the Act of Henry VIII. As a matter of fact she died from acute pneumonia and a finding to that effect disposed of the possibility of a learned argument taking place as to the relative effect of the two statutes. It will occur to many that it is the duty of the legislature to repeal an obviously obsolete Act of Parliament passed in the sixteenth century rather than to leave suitors to settle at great expense to themselves its precise position and force with regard to modern legislation. A glance at its text may raise a smile but will hardly satisfy the reader of its efficacy and usefulness in modern times.

Unrepealed Medical Acts.

The statute to which reference has been made in the preceding paragraph was passed to correct the hardships supposed to be inflicted upon herbalists by 3 Hen. VIII., c. 11, the first statute passed in England for regulating the medical profession. This Act also is still upon the statute book; it forbids the practice of medicine and surgery in the City of London and within seven miles of the same by anyone not admitted by the Bishop of London or by the Dean of St. Paul's for the time being, after examinations duly provided for, and for other parts of the kingdom it imposes corresponding conditions. It aims at the prevention of quackery upon sound grounds, some of them of modern application, as will be seen from the following quotation, for it sets out that "some also can no letters on the book, so far forth, that common artificers, as smiths, weavers, and women, boldly

and accustomably take upon them great cures and things of great difficulty, in the which they partly use sorcery and witchcraft, partly apply such medicines unto the disease as be very noxious and nothing meet therefore, to the high displeasure of God, great infamy to the Faculty, and the grievous hurt, damage, and destruction of many of the King's liege people, most especially of them that cannot discern the cunning from the uncunning."

The Act passed in 1542, upon which the defendant at Bow county court in 1903 claimed to rely and upon which no doubt other herbalists will rely until it is repealed or a decision has been given upon it after appeal, opens with scathing criticism of the medical profession of that day, for it declares in its preamble: "The Company and Fellowship of Surgeons of London, minding only their own lucres and nothing the profit or ease of the diseased or patient, have sued, troubled and vexed divers honest persons, as well men as women, whom God hath endued with the knowledge of the nature, kind, and operation of certain herbs, roots, and waters, and the using and ministering of them to such as been pained with customable diseases, as women's breasts being sore, a pin and the web in the eye, uncomes of hands, burnings, scalding, sore mouths, the stone, strangury, saucelim and morphew, and such other like diseases, and yet the said persons have not taken anything for their pains or cunning, but have ministered the same to poor people only for neighbourhood and God's sake and of pity and charity." It may be pointed out in all seriousness that this statute is obsolete; the relative positions of the surgeon and the herbalist have been, with regard to the poor patient, to a large extent reversed in the course of the evolution worked by four and a half centuries. Nowadays it is the surgeon who attends the poor for "neighbourhood and God's sake and of pity and charity." This last question as to whether the herbalist is only permitted to practise without fees by 34-35 Henry VIII., c. 9, is one of those which the court might be asked to decide in the event of an appeal under the Act. Finally, after still further castigating the surgeons of the day the Act proceeds to give formal permission to herbalists to "practise, use, and minister in and to any outward sore, uncome, wound, apostemations, outward swelling, or disease, any herb or herbs, ointments, baths, pultess, and emplaisters, according to their cunning, experience, and knowledge in any of the diseases, sores, and maladies before said, and all others like to the same, or drinks for the stone, strangury, or agues without suit, vexation, trouble, penalty, or loss of their goods."

It may possibly be urged from a sentimental point of view that such a law as this is a venerable relic of a day bygone and a monument of the care of Parliament for the good of the humbler members of the community, so that a decision limiting or negativing its efficacy would be preferable to its formal repeal by the legislature. It should not, however, be altogether forgotten that the final decision of the points which have been raised more than once upon it, if they ever come to be argued by eminent barristers "minding only their own lucres," will cost the Society of Apothecaries or other public body concerned in upholding the position of the medical profession some hundreds of pounds. More or less academic questions of law may be of interest to many besides lawyers but they are extremely costly to the suitors whom they immediately concern.

Bulley v. Lewis and Burrows.

In this case a lady who had had a prescription made up by the defendants received 24 pills in a box with instructions upon it to take two of the pills three times a day instead of, as had been prescribed, two pills only to be taken at bedtime. The pills contained calomel and 22 had been taken before the lady, who had by then suffered considerably, again consulted her medical adviser and the mistake was discovered. In an action for damages against the chemists on the ground of their negligence the lady gained a verdict for £150 in the King's Bench Division on Jan. 14th. According to the evidence of the defendants' manager, who was shown the prescription when the lady first complained, it then appeared to him to contain the words, "two pills to be taken at bedtime," but was difficult to decipher. It is not easy to see how these instructions could have come to be misinterpreted, as in fact they were; certainly in his own interest and that of his customer no chemist should make up a prescription unless satisfied that he has read it correctly in every detail.

THE ANALYSIS OF THE WATER FROM THE HOLY WELL OF ZEM ZEM.

SIR HORACE H. PINCHING, K.C.M.G., Director-General of the Sanitary Department of the Ministry of the Interior at Cairo, has been good enough to favour us with a specimen of the water of the Holy Well of Zem Zem contained in a small sealed tin which was one of three taken at Suez from a native on Sept. 29th, 1902. We have willingly acceded to his request to have an analysis made in THE LANCET laboratory, especially having regard to the fact that on two previous occasions an analysis of this water was made by us. We are thus in a position to note what changes have taken place in regard to the composition of the water and the results when compared give some indication of the variations as to the extent of pollution which takes place from time to time. The first analysis which we made was published in THE LANCET of Jan. 5th, 1884, p. 33, together with a note by Mr. Stanley Lane Poole, and the results of the second analysis appeared in THE LANCET of May 14th, 1892, p. 1075. Although not more than four fluid ounces of the water were at our disposal for the analysis, yet the signs of impurity were so marked as to enable us to record a fairly complete account of the water, the points in the analysis being those upon which an opinion as to the fitness of a water for drinking purposes is commonly based. The following were the results obtained expressed in grains per gallon:—

Total solid matter (Dried at 120° C.)	350·00
After ignition	273·00
Chlorine in chlorides (Equal to common salt, 119·00)	72·10
Nitrogen in nitrites and nitrates (Equal to potassium nitrate, 101·08)	14·00
Free ammonia	0·140
Albuminoid ammonia	0·028
Phosphates	Traces.

The solid matters gave signs of blackening on ignition and evolved fumes smelling of nitric acid. Practically the solid matters consist of common salt and nitrate and nitrite. All this is pretty conclusive evidence in favour of intense pollution still taking place and in this regard the results were worse than those obtained in 1892, but almost identical with those obtained with the water taken in 1883. We append the three analyses side by side made at the intervals indicated.

	1883.	1892.	1902.
Total solids	464·4	235·2	350·00
Chlorine	75·5	40·7	72·10
Nitrogen in nitrates and nitrites	13·84	4·45	14·00
Free ammonia	0·258	0·140	0·140
Albuminoid ammonia	*Nil.*	*Nil.*	0·028

According to these results the water of the holy well at Mecca has seriously deteriorated since 1892, and the probability is that any steps that may have been taken to prevent the contamination of the well have failed. This is not surprising, since the environment of Zem Zem is frequently of the most insanitary description, the well being necessarily affected by the infiltrations from the countless carcasses of beasts which are annually sacrificed by the pilgrims in the neighbourhood. Moreover, the fact that in addition to drinking the water the pilgrim has the precious fluid poured over him, which trickles away from his person back to the well, is sufficient to account for the excessive amount of oxidised nitrogenous material present. In spite of the great natural agencies at work in all natural waters by which organic matters are oxidised yet these agencies in the case of the holy well at Mecca are, it is evident from the analysis, powerless to deal with the enormous pollution to which the water is exposed. The presence of free ammonia, organic ammonia, and reduced nitrates justifies at any rate this conclusion. Lastly, microscopical examination showed the presence of fibres derived from personal clothing, a not very surprising result when we reflect that the pilgrim retires grateful when he feels that the cloth round his loins is wet.

THE LANCET Laboratory.

THE BATTLE OF THE CLUBS.

THE SITUATION AT CHESTERFIELD.

WE have on previous occasions referred to the position taken up by the friendly societies of Chesterfield with regard to the medical men of that town.[1] We related that the friendly societies of Chesterfield and district had determined to set on foot a medical aid association and to import a medical officer to serve the association. The Medical Aid Association is now an established fact and from the *Derbyshire Times* of Jan. 24th we learn that a meeting of delegates from the various friendly and trade societies in Chesterfield to the Medical Aid Association was held in the assembly room of the market hall on Jan. 21st. Mr. E. F. Hind, president of the association, was in the chair. In his speech he expressed himself as being well pleased with the position of affairs. They had, however, he said, unfortunately not got every friendly society member in Chesterfield within the pale of the association. If they had their numbers would be increased by about 1500. The association had been registered as a friendly society on Jan. 1st and on Jan. 21st the number of adult members was 2921. These members would produce an income in one year of £511 3*s.* 6*d.* They had in addition 41 wives paying 4*s.* per annum each, 115 families paying 8*s.* per annum each, and 332 juvenile members paying 2*s.* per annum each, so that their total income for the first 12 months would be at least £598 11*s.* 6*d.* By next year he estimated that their total numbers would be 4000. They had already started a surgery and they had a medical officer. They had become affiliated to the Medical Alliance and the next thing which the executive had to consider was how to provide their medical officer with assistance. Mr. Hind then referred to the medical men at Shipley who, he said, had refused to take any member as a club patient if his wages were as much as 35*s.* per week. The medical men wanted to say who should and who should not have the benefits of the friendly societies medical association. The friendly societies, however, could not permit this interference.

After the minutes of the executive had been confirmed the meeting ended. Now, therefore, the position is war between the Medical Aid Association and the Midland Medical Union. The executive of the latter body will have to spare no labour or pains if it wishes to fight a powerful trade organisation successfully. Its work will have to be painstaking and accurate and its officials must see to it that no slipshod methods are employed.

[1] THE LANCET, Sept. 27th, Oct. 18th, and Nov. 1st, 1902, pp. 897, 1067, and 1216 respectively.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8791 births and 5822 deaths were registered during the week ending Jan. 24th. The annual rate of mortality in these towns, which had been 20·0, 18·5, and 17·5 per 1000 in the three preceding weeks, rose again last week to 20·1 per 1000. In London the death-rate was 20·9 per 1000, while it averaged 19·8 in the 75 other large towns. The lowest death-rates in these towns were 6·2 in Smethwick, 12·0 in Hornsey, 12·2 in Leyton, 12·3 in King's Norton and in Blackburn, 12·8 in Walthamstow and in Leicester, and 18·1 in Willesden; the highest rates were 25·7 in Swansea, 25·8 in Huddersfield, 26·2 in Merthyr Tydfil, 27·0 in Newcastle-on-Tyne, 27·5 in Newport (Mon.), 27·8 in Stockport and in Oldham, 29·4 in Wigan, and 32·4 in West Bromwich. The 5822 deaths in these towns last week included 589 which were referred to the principal infectious diseases, against 602, 504, and 450 in the three preceding weeks; of these 539 deaths 185 resulted from whooping-cough, 123 from measles, 80 from diphtheria, 64 from diarrhœa, 48 from scarlet fever, 34 from "fever" (principally enteric), and five from small-pox. No death from any of these diseases was registered last week in Walthamstow, Norwich, Plymouth, Walsall, Handsworth, King's Norton, Smethwick, Blackburn, Halifax, or York; while the highest death-rates from these principal infectious diseases occurred in Great Yarmouth, West Bromwich, Stockport, Wigan, Manchester, Rotherham, Hull, Middlesbrough, and Newport (Mon.). The greatest proportional mortality from measles occurred in Wolverhampton, West Bromwich, Manchester, Hull, Newport (Mon.), and Merthyr Tydfil; from scarlet fever in Wallasey and Burnley; from diphtheria in Great Yarmouth, Middlesbrough, and Merthyr Tydfil; and from whooping-cough in Croydon, Willesden, West Ham, Aston Manor, Stockport, Wigan, Huddersfield, and Rotherham. The mortality from "fever" showed no marked excess in any of the large towns. One fatal cases of small-pox was registered in Stockport, one in Liverpool, one in Oldham, one in Burnley, and one in Sunderland, but not one in any other of the 76 large towns. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had declined from 21 to five at the end of the five preceding weeks, had further decreased to four at the end of last week; no new case was admitted during the week, the numbers having been one, four, and two in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday, Jan. 24th, was 2074, against 2378, 2219, and 2128 on the three preceding Saturdays; 227 new cases were admitted during last week, against 214, 223, and 195 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 415, 354, and 310 in the three preceding weeks, rose again last week to 411, but were 72 below the corrected average number. The number of deaths directly attributed to influenza in London was 43 last week, against 37, 39, and 34 in the three preceding weeks. The causes of 73, or 1·3 per cent., of the deaths in the 76 large towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Salford, Bradford, Newcastle-on-Tyne, and in 38 other smaller towns; the largest proportions of uncertified deaths were registered in Northampton, Norwich, Liverpool, Warrington, Sheffield, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 21·6, 22·6, and 23·4 per 1000 in the three preceding weeks, further rose to 24·6 during the week ending Jan. 24th, and was 4·5 per 1000 above the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·8 in Perth and 21·4 in Edinburgh to 25·8 in Paisley and 27·1 in Glasgow. The 804 deaths in these towns included 52 from whooping-cough, 21 from diarrhœa, 11 from measles, eight from "fever," five from scarlet fever, five from diphtheria, and not one from small-pox. In all 102 deaths were referred to these principal infectious diseases last week, against 77, 78, and 76 in the three preceding weeks. These 102 deaths were equal to an annual rate of 3·1 per 1000, which was 1·2 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 24 and 32 in the two preceding weeks, further increased last week to 52, and included 41 in Glasgow, five in Edinburgh, two in Dundee, and two in Aberdeen. The deaths from diarrhœa, which had been 22 and 18 in the two preceding weeks, rose again last week to 21, of which 10 occurred in Glasgow, five in Dundee, and two in Aberdeen. The fatal cases of measles, which had been 15 and 12 in the two preceding weeks, further declined to 11 last week and included six in Aberdeen and four in Edinburgh. The deaths from "fever," which had been 4·7 and three in the three preceding weeks, rose again last week to eight, all of which were registered in Glasgow. The fatal cases of scarlet fever, which had been three and five in the two preceding weeks, were again five last week and included two in Glasgow and two in Paisley. The deaths from diphtheria, which had been 13, seven, and six, in the three preceding weeks, further declined last week to five, of which three occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 152 and 174 in the two preceding weeks, further rose last week to 183, and were 55 in excess of the number in the corresponding period of last year. The causes of 27, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 20·4, 26·8, and

30·0 per 1000 in the three preceding weeks, declined again to 28·1 per 1000 during the week ending Jan. 24th. During the past four weeks the death-rate has averaged 26·6 per 1000, the rates during the same period being 19·5 in London and 19·4 in Edinburgh. The 204 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 14 from the number in the preceding week, and included 10 which were referred to the principal infectious diseases, against 23, 14, and 16 in the three preceding weeks; of these three resulted from diphtheria, two from scarlet fever, two from "fever," one from small-pox, one from measles, and one from diarrhœa, but not one from whooping-cough. These 16 deaths were equal to an annual rate of 1·4 per 1000, the death-rates last week from the same diseases being 2·2 in London and 1·6 in Edinburgh. The fatal cases of diphtheria, which had been four, three, and four in the three preceding weeks, declined again last week to three. The deaths from scarlet fever, which had been four, two, and one in the three preceding weeks, rose again to two last week. The fatal cases of "fever," which had been two, two, and six in the three preceding weeks, decreased again last week to two. The 204 deaths in Dublin last week included 31 of children under one year of age and 63 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a slight decline from the respective numbers recorded in the preceding week. Five inquest cases and four deaths from violence were registered, and 83, or more than 40 per cent., of the deaths occurred in public institutions. The causes of seven, or more than 3 per cent., of the deaths registered in Dublin last week were not certified.

THE VITAL STATISTICS FOR ENGLAND AND WALES DURING 1902.

As many medical officers of health have applied to us for certain information in order to comply with the requirements of the Local Government Board in regard to the compilation of their annual reports for 1902, we publish the following figures, for which we are indebted to the courtesy of the Registrar-General.

England and Wales (1902).

Birth-rate	28·6 per 1000 living.
Death-rate	16·3 ,, ,,
Seven epidemic diseases	1·64 ,, ,,
Infant mortality	133 per 1000 births.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff Surgeon E. C. Ward to the *President* for course of hospital study, to date Jan. 26th. Surgeon J. K. Robinson to the *Rainbow*, to date Jan. 21st.

ROYAL ARMY MEDICAL CORPS.

Major C. C. Reilly has embarked for India. Captain A. O. B. Wroughton joins the Coldstream Guards for duty as an attached medical officer.

IMPERIAL YEOMANRY (IN SOUTH AFRICA).

Unattached: Temporary Captain J. H. Wright, Medical Officer, relinquishes his commission. Dated Jan. 15th, 1903.

ROYAL ARMY MEDICAL CORPS (MILITIA).

The seconding of Lieutenant M. A. Cholmeley, which was announced in the *London Gazette* of Nov. 21st, 1902, should bear date Nov. 29th, 1902.

IMPERIAL YEOMANRY.

Lanarkshire: Surgeon-Major R. E. Wood to be Surgeon-Lieutenant-Colonel. Dated Jan. 24th, 1903.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Norfolk: Surgeon-Captain S. W. Woollett to be Surgeon-Major. Dated Jan. 7th, 1903. *Rifle:* 1st Lanarkshire: Robert Home Henderson to be Surgeon-Lieutenant. Dated Jan. 24th, 1903.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANIES.

Bedford: Charles Herbert Perram to be Lieutenant. Dated Jan. 24th, 1903.

Leicester and Lincoln: Montague Shirley Wyatt Gunning to be Lieutenant. Dated Jan. 24th, 1903.

South Wales Border: Captain J. W. Davies to be Major. Dated Jan. 24th, 1903.

South Yorkshire: Lieutenant F. J. Sadler resigns his commission. Dated Jan. 24th, 1903.

DEATHS IN THE SERVICES.

Colonel A. H. Cole Dane, I.M.S., at Karachi, Scind. He entered the service in 1867, was promoted surgeon-major in 1887 and surgeon-lieutenant-colonel in 1898. He served in the Afghan War in 1879–80 and was present in the engagements at Girishk, in the defence of Candahar including the sortie of Deb Khojah, and at the battle of Candahar (mentioned in despatches and medal with two clasps).

LEAN'S ROYAL NAVY LIST.

The January issue of this quarterly is now ready. In addition to the usual trustworthy information concerning the *personnel*, the vessels, and other matters connected with our first line of defence, it contains the first instalment of a series of articles on the "Current History of the Royal Navy." Messrs. Witherby and Co., High Holborn and Cornhill, are the publishers.

Correspondence.

"Audi alteram partem."

THE RISE OF BLOOD PRESSURE IN LATER LIFE.

To the Editors of THE LANCET.

SIRS,—If only in grateful recognition of Sir Richard Douglas Powell's notice of my paper on senile arterial pressures I would beg you to permit me some short answer to his letter in THE LANCET of Jan. 24th, p. 265. This letter is in part argument, in part remonstrance; the remonstrance being founded, as the writer admits, not on a full but on a summary report of my paper. In the full report, to my own eye at any rate, the words in which I suggested that our knowledge of the statics of disease is so far before our knowledge of the dynamics that it looms too largely on our horizon indicate surely no disdain of either of these essential parts of pathology. To say that anatomists from Mundini to Fabricius did little for physiology is surely not to put their anatomy to scorn; nay, to say that, in respect of contemporary medicine, anatomy is relatively complete and that we are now more in need of development in physiology is not to depreciate that solid foundation of medicine nor to doubt that the transactions of contemporary anatomists are still invaluable. We do not under-value line if we say that Ingres in his devotion to line neglected colour; nor, conversely, is colour under-valued if we point out that Turner in his visions of it neglected the forms of man and beast. Furthermore, as is well said by Sir Douglas Powell himself, dynamics are to be learned in the dead-house as well as statics. I may fairly hold that morbid anatomy is now far advanced, while morbid physiology, being in a rudimentary or at any rate in an immature condition, cannot hold its own beside it; and that if the habit of regarding disease on its dynamical side has been attained by some eminent physicians this habit is not common to most of us. How many of us who hold in our hands a chronically diseased kidney or a worn-out heart are able to see with the eye of the mind the long procession of past mechanical stresses and of past chemical perversions which in their silent progress and consummation had gone to the making of the mischief; or, again, as Sir Douglas Powell observes, the vision of the counter-plots of nature in the delay or compensation of it. But, after all, if we are to prevent disease it is to the beginning of the chain of accumulating stresses that we must look. That I ventured to emphasise this phase of pathology is surely no disparagement of research in its later stages.

To pass from apology to argument; and first to the argument that in senile high pressure contraction of the muscular arteries is the principal or a considerable factor. That in Sir Douglas Powell's opinion it is such a factor I was aware, and I have never ventured directly to

oppose the hypothesis when I found it supported by authority such as his, although I cannot give adhesion to it. I was not convinced when I gladly accepted Sir Douglas Powell's able exposition of it in my "System of Medicine." That these vessels in health are not only capable of such constriction but are, moreover, practically indefatigable, I admit; and I will go farther and admit (contrary to some opinions) that such a capacity is not extinguished nor always greatly diminished in arterio-sclerosis. I drew attention to two modes of high arterial pressure in elderly persons: (1) with slack and (2) with tightly contracted vessels, the latter form being, in my experience, far more difficult of cure, or even of mitigation, than the former; yet I cannot believe that vaso-constriction is the primary or chief cause of the high pressure even in the latter. My own slight laboratory experience, and, so far as I know, that of others (Dr. E. Laming Evans recently performed a few more experiments for me on this subject), is to the effect that a rise of blood pressure due to vaso-constriction (say, on irritation of the sciatic nerve) is but momentary—that such a rise may last for a few seconds at most. That vaso-constriction should be universal—i.e., should prevail in all areas at once—is contrary to experience; when it occurs in some areas it is counteracted by dilatation in others. That it may last long enough to determine the moment of an attack of angina pectoris, I am disposed to admit; that it can persist uncompensated for weeks, months, or years, or even for minutes, I am not disposed to admit. That loss of elasticity in the walls of the arteries leads to waste of energy and fall of pressure is true, but my thesis was not concerned with falling pressures; so for brevity's sake I deliberately omitted this and some other conditions of arterial work. I am sorry to be unable to explain the nature or causes of that viscosity of the blood which I postulated; I was not silent but ignorant: yet we may do good service by insisting upon a particular lack of knowledge. I tried to bring out this factor, to run the problem down to it, to suggest that viscosity and specific gravity are not identical, nor even common variables; and that experiments on this subject have yet to begin. I dare-say "products of imperfect metabolism" may make the blood viscous, but I do not know it nor do I care to take shelter under the phrase. Perhaps some competent pathologist will undertake a series of experiments on the blood pressure of animals before and after the injection of purin bodies.

I am, Sirs, yours faithfully,

Cambridge, Jan. 26th, 1903. T. CLIFFORD ALLBUTT.

*** Sir Richard Douglas Powell asks us to make the following corrections of verbal errors in his letter published last week. In the fifteenth line the word "useful" should be "careful," and in the next line there should be no quotation marks inclosing the words "collateral pathology."—ED. L.

THE ETIOLOGY OF SUMMER DIARRHŒA.

To the Editors of THE LANCET.

SIRS,—My experience of summer diarrhœa in Southend has been such that on Nov. 12th, 1901, at a conference of Essex medical officers of health at Leytonstone (convened by Dr. J. C. Thresh to discuss infant mortality in Essex) I felt justified in ascribing the principal rôle in the causation of epidemic or summer diarrhœa to flies, more particularly the common house-fly and the blue-bottle fly. I maintain that flies are the chief agents concerned in carrying fæcal pollution to milk and other foods during the summer months. Apart from other considerations my local experience has given me some ground for advancing this hypothesis which I laid before the Epidemiological Society of London in the recent discussion on Professor S. Delépine's paper.

The facts are as follows:—During July and August, 1902, there was no mortality in Southend from diarrhœa among infants under one year as compared with 23 deaths among infants from the same cause during the corresponding period of 1901. July and August, 1902, were comparatively cool months and rain fell on 22 out of the 62 days (there being 13 wet days in August). *The most remarkable phenomenon of these months, however, was the almost complete absence of Musca domestica.* In September the fly made its appearance and coincidently epidemic diarrhœa was in evidence and 13 infantile deaths from this cause were recorded in three weeks. The advent of the fly was of short duration and the insect had practically disappeared by Sept. 25th. From this date no further deaths from diarrhœa occurred in Southend. Where refuse and midden heaps are in the proximity of cowsheds and dairies they are, I am sure, a source of great danger, even if the water-supply is pure and beyond suspicion. I think that they are a danger, partly, and to a lesser degree, by the risk of infective dust being blown on to exposed milk during dry weather; and partly, and to a greater degree, by the risk of flies carrying contamination direct from the refuse heap to milk or to the udders of the cow or the hands of the milker. Subsequently to this method of infection, time and temperature (as recently emphasised by Professor Delépine) play an important part in the rapid increase of infective material, not to speak of fresh contamination by flies and dust in the dairy shops and in the homes of consumers.

In addition to the important preventive measures which are generally advocated as to the cleanliness of cows, cowsheds, milkers, dairies, utensils, &c., I would add the daily removal of all forms of refuse from the proximity of all cowsheds and dairies, *and the covering over of all standing milk so as to exclude all dust and flies.* I am not aware of a more simple or a more important preventive measure than this last, which applies equally to boiled and unboiled milk, opened tins of condensed milk, and indeed to all articles of food. It is, however, very important to lay special stress on milk because it is the usual food of infants and because it forms an ideal medium for the rapid multiplication of bacteria. I am, Sirs, yours faithfully,

J. T. C. NASH,
Medical Officer of Health, Southend-on-Sea.

Southend-on Sea, Jan. 22nd, 1903.

ASSOCIATION OF THE BRITISH MEDICAL PRESS.

To the Editors of THE LANCET.

SIRS,—A proposal was made some time ago on behalf of the French medical press for the formation of an international association of the medical press. A provisional committee was formed in this country under my chairmanship. This committee was represented at a conference held at Monaco in April, 1902, under the presidency of Professor Cornil to settle preliminary details. The regulations then adopted have recently reached this country and the provisions proposed seem on the whole expedient and reasonable. An association of the British medical press has therefore been formed to coöperate with the international association. The editor of any British journal devoted to medicine who may wish to join this association or desires further information on the subject should communicate with Mr. L. E. Creasy, editor, the *Clinical Journal*, 35A, Welbeck-street, Cavendish-square, London, W.

I am, Sirs, yours faithfully,

THOMAS WAKLEY, Jun.

"MYASTHENIA GRAVIS" IN THE SEVENTEENTH CENTURY.

To the Editors of THE LANCET.

SIRS,—"Myasthenia gravis" has only recently found a place in text-books as a distinct disease and Sir Samuel Wilks is usually credited with having been the first to put a case on record in 1877. The following quotations from "The London Practice of Physick, or the whole practical part of physick contained in the works of Dr. Willis," published in 1685, seem to show that the disease was known to that eminent seventeenth-century physician. Speaking of "The Palsey" (p. 431) he says:—

> There is another kind of this disease depending on the scarcity and fewness of the Spirits, in which the motion fails wholly in no Part or Member, yet it is performed but weakly only, or depravedly by any: ..... those who being troubled with a scarcity of Spirits, will force them as much as they may to local Motions, are able at first rising in the Morning to walk, move their Arms this way and that, or to lift up a weight with strength; but before Noon the stores of the Spirits which influenc'd the Muscles being almost spent, they are scarce able to move Hand or Foot. I have now a prudent and honest Woman in cure, who for many years has been obnoxious to this kind of bastard Palsey, not only in the Limbs but likewise in her Tongue; This person for some time speaks freely and readily enough, but after long, hasty, or laborious speaking presently she becomes mute as a fish, and cannot bring forth a word, nay, and does not recover the use of her Voice till after an hour or two.

Willis speaks of the case as "in cure," and one wolders if he cured it. He evidently regarded it as "functional," for he includes it in the class of patients who—

> Without any considerable sickness keep their Beds for a long time, as Persons ready to dye; whilst they lye undisturbed they discourse with their friends, and are chearful, but they neither will, nor dare be raised up, or walk about, nay they abhor all motion as some dreadful thing.

Myasthenia gravis has been mistaken for a functional or hysterical affection even in our own times and our knowledge of the pathology of this mysterious disease and also of hysterical palsies in general has not greatly advanced since Willis wrote:—

> The Spirits residing in the Brain are conscious of the Weakness of the others placed in the Members, they refuse to impose local motion on their Companions, as being a Task too difficult for them; for which cause the affected are scarce led by any persuasion to try whether they are able to go or not.

I am, Sirs, yours faithfully,

LEONARD G. GUTHRIE.

Upper Berkeley-street, W., Jan. 20th, 1903.

CLEAN MILK *v.* BOILED MILK.

To the Editors of THE LANCET.

SIRS,—When I terminated my residency at the Hospital for Sick Children in Great Ormond-street, London, in 1869 and commenced practice in the country I vainly believed that I had seen the last of rickets—that sad preventable disease which blights the child's early life, even when it does not do more—which I fondly regarded in those remote ages as a disease incidental to the slums and alleys of cities. Since that time my eyes have been opened to the facts that it is not a question, even a subsidiary one, of *fresh air*, for my practice lies in a healthy district nearly 400 feet above sea level, in fine open country where the soil is mainly gravel and where the workpeople have good cottages and good wages; that it is not a question of *poverty* or wealth, for often the poorest escape the disease as they more frequently are brought up on breast milk and when reared by hand they leave milk early and partake of "the same as ourselves," while well-to-do neighbours are sufferers; that it is not a question of a constitutional disease or defect, such as *syphilis* or *tuberculosis*; but that like infantile scurvy it is a question of *food*, and that food *milk*, and that milk a *cooked milk* under various guises. And owing to this prevailing custom of preparing infants' and children's milk both rickets and infantile scurvy are on the increase.

It is so refreshing—almost as refreshing as a glass of "new milk" to a thirsty soul—to find some members of our profession, even though it be in a distant land, making an effort to supply *clean new milk* from the dairy that I propose to relate what is being done by our American cousins, as recorded in the *Archives of Pediatrics*[1] for December, 1902. A milk commission was arranged by the Medical Society of the County of Kings, with representative members from four other medical societies, which summoned milkmen to attend a meeting; about 50 were present and three or four signified their intention of attempting to furnish a milk certified by the commission. The adopted standards of the commission are: (1) That the milk shall contain 4 per cent. of butter fat; (2) that the acidity shall not be more than two-tenths of 1 per cent; (3) that the bacterial count shall not exceed 30,000 to the cubic centimetre instead of from 1,000,000 to 10,000,000; (4) that the dairies shall be inspected by a qualified veterinarian; and (5) that the commission itself shall supervise the feeding, the milking, the cleanliness of the premises, and the ventilation.

Although the commission has only been formed a few months the clinical results already obtained with certified clean milk are most encouraging. The chairman of the commission, Dr. E. H. Bardley, insists that pasteurising and sterilising always injure milk, and in confirmation and to impress the importance of pure raw milk, he quotes the results of the investigation of the American Pediatric Association of 1896 on the subject of infantile scurvy, which he regards as one of the best indexes of infantile nutrition. In analysing the histories of 379 cases it was found that—

Breast milk was accountable for	10	cases of infantile scurvy.			
Breast milk, with additional food, was accountable for	2	,,	,,	,,	
Raw cow's milk was accountable for	5	,,	,,	,,	
Pasteurised ,, ,, ,,	20	,,	,,	,,	
Condensed ,, ,, ,,	60	,,	,,	,,	
Sterilised ,, ,, ,,	107	,,	,,	,,	
Proprietary foods were ,, ,,	214	,,	,,	,,	

As some of these children were fed on more than one milk the numbers exceeded 379. The essential process in obtaining a pure "new milk," after insuring the health of the cows and the strictest cleanliness in the milking and its surroundings, *is the rapid cooling of the milk to about 40° F.*, at which temperature milk can be kept 24 hours with very little bacterial growth, while at room temperature each bacterium multiplies about 435 times in the same period.

Owing to the injury which is being inflicted on the children of the present generation by the use of cooked milk in their rearing, which far outweighs the diseases generated from time to time by using raw milk, and which could be entirely obviated by requisite care, I would commend the scheme recorded by this commission, details of which are furnished in the *Archives* referred to, to my professional brethren in the hope that clean new milk may be substituted for that which is deteriorated in nutritive value during the various processes of cooking.

I am, Sirs, yours faithfully,

CLEMENT DUKES, M.D., F.R.C.P. Lond.,
Physician to Rugby School and Senior Physician to Rugby Hospital.

Jan. 24th, 1903.

[1] Published by E. B. Treat and Co., 48, Old Bailey, E.C.

RIGHT-HANDEDNESS AND LEFT-BRAINEDNESS.

To the Editors of THE LANCET.

SIRS,—I have followed with much interest the letters on this subject which have been published in THE LANCET and trust that you will find room for a word or two from me. I will not discuss the physiologico-anatomical question of left-brainedness, but will offer a few remarks on the uses of the right and left hands. The experience of mankind proves that the predominant power or use of one hand is to a great extent hereditary and that this power is more common in the right hand. This natural right-handedness has led through all times to the adaptation of mechanical contrivances to the preferential use of the right hand.

It is hardly necessary to say that the right hand is often largely dependent on the left to carry out our work, and so it becomes a matter of primary importance to cultivate the use of the left hand so as to fit it to help or in many cases to take the leading part. This is obvious to everyone who observes builders and other mechanics at work. It constantly happens that work cannot be easily, if at all, carried out by the right hand. Working round a left corner the right hand can hardly be used without involving great danger. The mechanic therefore trains his left hand. There is no art that calls for this left hand training more than that of the surgeon. I do not believe in a surgeon who is not skilful in the use of both hands. This is especially clear in ophthalmic surgery. How can the eye surgeon operate on the right eye with his right hand without resorting to such distortion of his hand and sight as to make precision of action difficult? The like argument applies more or less to all surgery. It is, therefore, of the highest importance to cultivate the use of the left hand. In my own case I have the advantage of being naturally left- and right-handed, but still I have steadily made the left hand do its share of work and this I have tried to teach others to do. I am reminded of this by a skilful surgeon, a friend, who tells me that when a student reading my books he was struck by my advice to shave the right side of his face with his left hand. This constant exercise is a valuable training in the use of the knife. I always dissected one side of the body with the left hand. In this way anatomy is, in a double and practical sense, the true training for surgery.

I am, Sirs, yours faithfully,

ROBERT BARNES.

Jan. 24th, 1903.

LUNACY AND THE LAW.

To the Editors of THE LANCET.

SIRS,—Your leading article in THE LANCET of Nov. 29th, 1902, p. 1473, points out some difficulties in the full acceptance of Sir William Gowers's views on the above subject, but there are other details to be kept in view and it is to be hoped that opportunity for a full discussion of the subject may be given by the Medico-Psychological Association, for it is certain that the sweeping proposals of Sir William Gowers do not meet with the approval of many of the members who had not the opportunity of joining in the debate. It would seem as if Sir William Gowers wished to bring into line the practice of neurology with that of insanity, and in theory this ought to be so, but as things are alienists (for want of a better term) are not neurologists and the latter rarely have had the practical

experience among the insane which alone can qualify them to speak with authority on the subject. The friends of patients would doubtless welcome the introduction of any measure which would save the family name from the fancied stigma of certificates, but this abolition of certification is viewed with real alarm by many who recognise that after all the patient is the chief person to be safeguarded and that, too, in the early stages of the disease. It does, unfortunately, seem to be necessary that some form of protective notification to a constituted authority must be taken in treating insane persons, and if the suggested registration, visitation, and reporting are adopted in place of certificates, there is really little, if any, difference in the two classes of procedure as regards "stigma." Some modification in the facility of obtaining certificates might with advantage be afforded and the time-wasting obstacle of requiring the authority of a magistrate should be dispensed with.

Everyone must agree with the criticisms of Sir William Gowers upon the inadequate strength on the medical side of the Lunacy Commission and of the necessity for a modification of the present needlessly painful wording of the ordinary certificate, but what many hesitate to give unqualified approval to is the risk of having patients placed in "homes" or in the private care of individuals without some guarantee that those who are making money by the process shall recognise their full responsibility to the law, and through the law to the patient, in doing so.

Many persons who are in the early stages of mental disease cannot afford the luxury of a "home" or of private individual care, and these will probably be best dealt with in general hospitals or in the reception houses which are, I understand, to be shortly considered and legally constituted; but whatever the change may be that is contemplated it is not easy to see how some form of legal sanction can be dispensed with whenever the full liberty of the individual is interfered with. The friends of patients ought to be educated to recognise as an *obiter dictum* that a proper form of legal protection (whether by a certificate or otherwise) is no more a "stigma" than is the fact of the occurrence of the disease.

I am, Sirs, yours faithfully,

Harley-street, W., Jan. 20th, 1903. T. CLAYE SHAW.

FACIAL PARALYSIS IN SECONDARY SYPHILIS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 17th, p. 187, is a statement to the effect that in no case of facial paralysis occurring during the secondary stage of syphilis has the cause of the paralysis been demonstrated by post-mortem examination. In this connexion may I venture to draw your attention to a case recorded by Dr. James Carslaw and Dr. R. M. Buchanan which shows the above proposition to require qualification? The patient died some 12 months after he had acquired syphilis and at the time of his death had been for two or three months the subject of bilateral facial paralysis. The cause of this, as was shown by histological examination, was a neuritis associated with numerous hæmorrhages in the trunk of each facial nerve. The reference will be found in the *Glasgow Hospital Reports* for 1898.

I am, Sirs, yours faithfully,

Weymouth-street, W. C. O. HAWTHORNE.

DIRECTIONS FOR PHOTOMICROGRAPHY.

To the Editors of THE LANCET.

SIRS,—Mr. Frank Crosbie's article in THE LANCET of Jan. 24th, p. 233, is a most useful one and evidently the result of considerable practical experience and much ingenuity; in one or two points, however, he fails to point out the way of getting the best results. I do not agree with his recommendation to remove the ground glass focussing screen; this should be retained and used to see the general effect which is quite lost on a clear screen. Either a second carrier with a clear screen should be used for final focussing of details or two or three small thin cover-glasses should be cemented on to the ground-glass face with Canada balsam; the balsam fills up the irregularities on the glass, and having practically the same refractive index converts it into clear transparent spots where the detail can be accurately focussed with a lens.

Yellow screens in my experience do not give the most generally useful results, they give far too great a range of the spectrum to show effective contrasts; the depth of colour recommended by Mr. Crosbie (a landscape light filter increasing exposure three-fold) is not enough effectually to cut out the blue end of the spectrum. There is no difficulty in getting photographs excellent in definition with ordinary achromatic lenses, and although apochromats are preferable their price renders them prohibitive to many. By suitable choice of screens, plates, and developers there is no trouble in photographing anything with achromatic objectives. The most generally useful screen is a green one; I generally use the Sanger Shepherd green light filter, as supplied with their outfits for colour photography, but have obtained excellent results with a screen made from two lantern slides from which the silver has been removed by hypo; one of these is stained in a 5 per cent. solution of auramine and the other in a solution containing 2½ per cent. iodine green and 2½ per cent. methylene blue. Such a screen gives an effective contrast with practically any colour, including fuchsin.

The choice of plate is very important; with such a screen the Cadett spectrum plate gives the best results, especially when objects stained with fuchsin are being photographed; for algæ and other chlorophyll-bearing substances the Thomas A1 Iso plate (which is nearly insensitive to a certain region in the green) is preferable; for blues the "Isolar" orthochromatic plate is good and Edwards' isochromatic plate also gives good results up to yellow in the spectrum. Other plates I do not like so well. The hydroquinone developer recommended by Mr. Crosbie should be replaced by metol whenever details in red sections are to be shown and generally with a slide showing very sharp contrasts. The green screen has the advantage that it transmits rays having approximately the same refractive power as the mean visual ray, and achromatic lenses are corrected for this; if a blue screen is used the object must be focussed with the screen in position, otherwise the image is not sharp.

I would mention that there is no trouble in taking microphotographs in their natural colours. It is necessary to point out that exposure varies with the plate; the following are the approximate relative speeds:—

Edwards' Medium Iso Thomas Extra rapid	1	Edwards' Snap Shot Iso Cadett Medium Spectrum	2
Thomas A1 Isolar	1	Cadett Lightning Spectrum	3-4

Metol requires rather less than half the exposure necessary when hydroquinone is used. But one more point remains; the definition will be improved if a good condenser with a suitable diaphragm is interposed between the light and the substage condenser; acetylene forms a very good illuminant, and with a 400 candle-power light exposures can be cut down to about one-tenth of those given by Mr. Crosbie.

I am, Sirs, yours faithfully,

Twickenham, Jan. 24th, 1903. H. DROOP RICHMOND.

THE HOUSING PROBLEM AT ABERDEEN.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

IN regard to the housing problem there is at Aberdeen a very good example of what should not be done. It has often been said that failures are as instructive as successes, and in any case they serve as useful warnings. This is illustrated in a practical manner by the history and present condition of a small community living close to the entrance of the port of Aberdeen. For centuries this community had dwelt in the old village of Footdee, or Fittie, as it is sometimes called. They were a race who differed in manners and in accent from the Aberdonians. They earned their living by line-fishing and were a simple-minded, kindly, industrious people. In 1808, however, the ground on which their village stood was acquired for the purpose of extending the harbour. Here, then, arose a housing problem long before this question had become, as it is to-day, a subject of extensive study and discussion. Nevertheless, in those days the city fathers soon found an effective solution of the difficulty. Houses were wanted, and so they set to work and built them and there the matter for the time being ended. Of course, houses built in 1808 did not contain the sanitary conveniences now judged to be necessary, but these might have been gradually added as the need for such improvements made itself

felt, particularly as the council continued to build at intervals up to the year 1874. But in 1870 the council reversed its policy, and from that date it sought to induce the tenants to buy the houses which they occupied. Just as appetite comes with eating, so the mania for selling off grew and by the year 1881 the municipality had parted with all the houses. The prices varied from £65 to £180 per house. 25 per cent. of this money had to be paid down and the remainder in instalments at a charge of 4½ per cent. Then a ground rent of 10*s.* per house per annum is charged. The total cost of the houses amounted to £6773 10*s.*

The result might have been predicted by anyone acquainted with the economics of such questions. It is now, of course, impossible to take or to enforce any sanitary measures. Notices are served, but the responsible owners are all too poor to carry out the instructions given. According to the report by Dr. Matthew Hay, medical officer of health, and Mr. Cameron, chief sanitary inspector, the Fishers' Squares of Footdee now consist of three squares with 168 houses. Of these houses 78 have but one room, 65 have two rooms, 19 have three rooms, and three have five rooms. Then 76 houses have but one storey, while the remainder have two or three storeys. They were all built by the town council and the last instalments for their purchase were paid in 1892. But no sooner had the occupiers bought the houses than many sublet them, and thus to-day only 78 of the houses are still inhabited by the owners. For the remaining 90 houses £381 4*s.* rent is paid, which makes an average rent of £4 4*s.* 8*d.* per house per annum. The total population is a little more than 700. Of the bread-winners the majority—namely, 64—are still line fishermen, eight are trawl fishermen, nine work in the fish trade, 18 are pilots, 40 are engaged in other occupations, and there are 27 widows. It will be seen that this is not the sort of population that can pay out of its own pockets any large sum for sanitary improvements. As a natural consequence, and though the sanitary inspectors have periodically reported adversely about this place ever since the year 1883, nothing has yet been done. At that time small privies were erected, but they soon caused such a nuisance that they were abolished in 1892–93 and notices were then served on the owners to provide water-closets to their houses. Of course they have done nothing of the sort and this for the very simple reason that they have not got any money and water-closets cannot be obtained for nothing. The borough surveyor, Mr. W. Dyack, reported that the only ground belonging to the owners is that on which the outhouses stand and that there is no room in them to build water-closets. A closet for each self-contained house and one for each three tenants would cost in all £930. Then if 124 sinks—and these are much needed—were provided inside the houses with water-supply this would cost £550 more. But further, it would be very useful to remove the outhouses. These are mere plank shanties built on the sand and often not in the right place—that is, not actually on the ground owned by the builder of the shanty. These outhouses should be rebuilt, put in their proper place, and provided with concrete floors. Originally they were constructed merely to hold the fishing tackle; now they are to a large extent used as wash-houses, and for this purpose they are utterly unsuited. Then the paths should be rearranged and means should be taken to drain away the rain-water from the roofs of the houses and this would cost £3138. All these measures are needed.

So far the only thing that has been done is the construction of two public latrines outside, but close to, these three squares. These, however, are only for men, and on visiting these public conveniences I was somewhat surprised at the absence of privacy. The seats are exposed to view. There is, however, a board behind to prevent anyone standing on them and the closets are technically efficient means of drainage. On entering the Fishers' Squares I found a little village of small cottages built on sand by the seashore. There was no trace of pavement and the sand had become black with usage. Here and there I noticed a grid leading to the sewers, but no gutters or properly contrived drainage towards these grids. By the side of one of them there was a nasty heap of all sorts of refuse. Indeed, the ground around the houses was polluted with excrement. There are no proper drainage arrangements or sinks or water-closets, only a badly kept gutter on the outer edge of the footpath that passes in front of the houses, discharging at long intervals into the gullies leading to the town sewers. Only 27 out of 168 houses have sinks and there is no proper washing accommodation. The outhouses in all number 163 and of these 112 are but wooden hutches built to hold fishing tackle. Though only two out of these outhouses have a water-supply and none of them any proper flooring, yet they are nearly all used as wash-houses. Nor is there any water-supply inside the houses—water has to be fetched from the public taps. Then there are no eaves or gutters to the roofs of the houses, so that there is no means of draining the rain-water away, and it forms pools, mixes with slop-water, and stagnates till it evaporates or slowly sinks in the soil. There are a few ashpits, but these are lined only with planks and some are not lined at all. Therefore, every possible source of contamination sinks into the subsoil, and doubtless there would be much sickness but for the fact that the village occupies an admirably healthy site overlooking the beach and swept by the pure sea winds. A population of hardy fishermen may well live there and defy the laws of sanitation, but their cottages on the sand with no drainage reminded me very forcibly of the fishermen's village of Le Portel on the outskirts of Boulogne-sur-Mer which I visited in 1893 when its population was sorely afflicted by cholera.[1] There was also cholera at Boulogne-sur-Mer, but that town has drainage, paved streets, closets, and some show of sanitation, so that there were but 79 cases and 31 deaths out of a population of 45,205. At the same time the epidemic broke out at Le Portel, where there are no pavement, no drainage, and no closets, and all the house refuse and soil are thrown out on the sand, much in the manner prevailing at the Fishers' Squares of Aberdeen. The result was that there were at Le Portel 130 cases and 76 deaths from cholera out of a population of 5329. Thus at Le Portel, where the sanitary conditions were somewhat similar to those of the Fishers' Squares, we found a mortality from cholera equal to 14·26 per 1000 of the population; while at Boulogne, where the sanitary conditions were more like those of the town of Aberdeen, though not so good, the mortality from cholera was only equal to 0·65 per 1000 of the population. This contrast serves as an object-lesson which is quite applicable to Aberdeen.

For some 20 years protest after protest has been made but nothing could be done. How different is the case within the town of Aberdeen. Here house property is not all in the hands of the extremely poor and consequently the owners can be compelled to carry out required improvements. These were very extensive. When the sewers were built private owners did not connect their house drains in a proper manner. Many of the soil-pipes were not trapped and the joints were not cemented. Frequently only a little clay was used. It has taken 20 years to have all the private drains of the town tested and relaid. Every notification of illness is made the pretext to examine the drains, and it would now be a difficult matter to find a house with drains that leak. This and other energetic sanitary measures seem to have borne good fruit. The average annual death-rate during the 10 years from 1866 to 1875 was 23·0 per 1000 of the population. This fell to 20·4 during the next 10 years, and to 20·0 during the third decennium; and for the five years from 1896 to 1900 the average annual death-rate was only 18·2 per 1000. The average number of deaths from typhoid fever per 100,000 inhabitants per annum was 42 during the first of these same 10 years, 21 during the second, and 12 during the third, while for the remaining five years from 1896 to 1900 it was only eight, though it rose again to 10 per 100,000 inhabitants during the year 1901. These figures are a very good illustration of what sanitation can do. The local Act or Corporation Act of 1881 gives the town council ample powers for dealing with single dwellings, but not with areas. When a dwelling is certified by the medical officer of health and the sanitary inspector as unfit for habitation the authorities have the power to declare that it is so unfit and they can then have the building closed without there being any right of appeal by the owner against such a course of action. It is a purely arbitrary power, there is not even the obligation to hear evidence. Nevertheless, this law has worked admirably. More than 100 houses have thus been closed and yet there are no complaints as to harshness. Those houses that are still not up to the present standard of sanitation are now allowed to remain till other and better houses have been built. The authorities of late have displayed rather more caution. There is

[1] THE LANCET, March 18th, 1893, p. 607.

no longer the same need for haste, as the worst houses have been dealt with. Then action has also been taken under the Housing of the Working Classes Act to effect the clearing of large areas. The local Act did not give the power to demolish insanitary property, but another Corporation Act was obtained in 1900 and this confers power to pull down what is condemned under the former local Act. This power of demolition, however, is not arbitrary: the owners have a right to appeal, as under the Housing of the Working Classes Act. Some houses, nevertheless, have been demolished under this new local Act. But, as with the Fishers' Squares so with some of the bad property within the town of Aberdeen—the owner is sometimes too poor to effect the necessary alterations. It also happens occasionally that even if the owner has the means and is willing to rebuild there is no space to raise a really healthy dwelling. On the other hand, if an order to close the existing dwelling is obtained the owner will not go to the expense of boarding up the windows, so that the deserted house is soon invaded by tramps and such persons, and the conditions which they create are worse than anything that existed before. But such difficulties only arise in isolated and scattered cases.

At the Fishers' Squares the problem is far more serious, for it affects what may be described as an entire village. Nor is it a question of dealing with a rough slum population. On the contrary, it is a population of industrious, worthy people who are householders. Yet, considering how little they are able to earn, it is absolutely absurd to expect that they can pay for the necessary improvements. It was only with great difficulty and by small instalments that they paid £6773 for the purchase of their 168 houses; now they ought, it is estimated, to pay £930 more for water-closets, £550 for sinks and indoor water supply, and finally, some £3138 for the rebuilding of their outhouses, the paving of their squares, and the draining away of their rain-water—in all some £4618. As this sum is about three-quarters of the price that they paid for the houses and as a quarter of the price of the purchase had to be paid down at once and the rest in instalments, should the sum required for sanitary improvements be paid in the same manner the inhabitants would find this as heavy a tax on their annual incomes as the purchase of the houses has been. And yet this is the solution of the difficulty which has been proposed. In the report of the medical officer of health for the year 1901 there occurs the following passage:—

> Reference was made in the last year's report to the very unsatisfactory condition in respect to want of sink and water-closet accommodation at the Fishers' Squares, with a population of fully 700, and to the fact that a report on the subject by the sanitary inspector and myself had been presented to the local authority. The report was dealt with early in the past year, and it was eventually agreed, after conference with the owners of the houses, who are principally fishermen with little means at their command to meet the outlays required, to give such of them as would undertake for themselves the necessary additions and alterations a reasonable time in which to carry them out, and failing the execution of the works by the owners the town council resolved themselves to execute them and to recover the cost subsequently from the owners. Up to the present time practically nothing has been done by the owners, and it will therefore fall to the town council to undertake the works. The present condition of the squares is a standing menace to the heal h of the city. This case of the Fishers' Squares illustrates the difficulty of obtaining structural sanitary improvements of property when the owners are working men and poor.

This last sentence is all-important, and yet it states a fact that is often overlooked. Many social reformers, on the contrary, seem to consider it quite an ideal solution of difficulties when workmen become owners of the cottages or houses in which they dwell. The reverse is the case, at least so far as the sanitary aspect of the problem is concerned. The workman never has enough money to keep his house in proper repair or to effect the alterations which from time to time become necessary. On the other hand, the authorities very naturally hesitate to take proceedings against a man who doubtless has many good qualities and has proved himself to be a very thrifty, steady, trustworthy member of the community, otherwise he would not have been able to purchase his own house. The town council of Aberdeen consequently made a great mistake when they sold the cottages to these poor fishermen. By so doing they have created a situation with which now for about a quarter of a century they have been unable to deal. The dangerously insanitary state of affairs still prevailing could have been put right long ago had the town council still owned the property. As the town can borrow money at a very low rate of interest it need not have made a very heavy increase in the rents charged to recoup itself. And now after all these years something of the sort will have to be done. The town council will have to make the necessary alterations itself just as if it still owned the property, and it will only get refunded by small instalments spread over a number of years, which it will have to collect as it might collect rents. Thus the council now experiences all the disadvantages and none of the advantages of ownership. It is curious that the town council of 1808 should have given proof of far greater foresight and wisdom than did the town council of 1870.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Further Development of the Plague Epidemic.—A School of Military Cookery for Poona.—A New Parsee Lying-in Hospital in Bombay.—Some Sanitary Arrangements at the Great Durbar Camp.

THE deaths from plague in India during the week ending Dec. 27th amounted to 15,897, as compared with 14,203 in the previous week and 8005 in the same period last year. The seizures recorded totaled 21,189, but as the death-rate varies so greatly in different provinces, depending apparently upon variations in the accuracy of returns, I only quote the mortality. In the Bombay Presidency there were 7025 deaths; in the Madras Presidency, 466 deaths; in the Bengal Presidency, 1675 deaths; in the United Provinces, 1366 deaths; in the Punjab, 3218 deaths; and in the Mysore State, 942 deaths. The worst places in Bombay are the Belgaum, Dharwar, Satara, and Khandesh districts and the Kolhapur State; those in Bengal are the Saran, Monghyr, Patna, and Shahabad districts. In the Punjab the disease is rapidly developing, having nearly doubled in fatality during the past week. A few cases occurred in the Delhi camp, but they were quickly isolated and nothing further has been reported. The city of Bombay shows once more a recrudescence. For months past the plague returns have kept within moderate figures—for the most part only two deaths—but within the past fortnight the weekly deaths from plague have risen in number to 183. In Calcutta, although the fatalities recorded are small, there are also signs of a further outbreak. Two cases of plague have recently occurred in Fort William amongst the natives of the bazaar which is permitted to exist there. In Poona city also the disease is once more making headway. Epidemiologists have doubtless noted the gradual increase of fresh centres of development with each succeeding year, while at the same time the disease has periodically recurred in the first affected districts.

The success of the plan adopted by the colonel of a famous regiment in making his soldiers their own cooks instead of being dependent upon native servants has at last been taken to heart and the Government of India has decided to make provision of one and a half lakhs of rupees in the estimates and to establish a school of cookery at Poona at a cost of about Rs. 28,000.

In 1898 I reported upon the Parsee Lying-in Hospital in Bombay which was established with the object of emancipating the poorer classes of Parsee women from the bondage of certain old-time habits and which was at that time carrying on much useful work. And I have now to record the opening of a second hospital in the Grant-road. This has been started through the progressive spirit of the Parsee community with the object of extending to the middle classes the benefits of a well-organised home and of replacing the common "dhais" by qualified surgeons. Dr. (Miss) Turkhud and Dr. Jamshed N. Bahadurji are the chief spirits in this new work. For the charge of Rs 5 per diem (equal to 6*s.* 8*d.*) patients will be entitled to skilled medical aid, good nursing, and hygienic surroundings, as well as home comforts.

The brief account of the sanitary arrangements of the Delhi Durbar camp which I was able to give last week requires supplementing. The large water-supply distributed by iron pipes from the reservoir on the Ridge is partly obtained from the river Jumna but also from a series of wells sunk close together within a short distance of the river and parallel to it. These in ordinary times supply Delhi city with water and the quality of the water derived from them is considered sufficiently good and does not require filtration. For the great camp, however, the additional filtration works were largely used. For these reserve works the water is obtained by pumping from the river and the

water is passed through well-constructed and up-to-date filter beds before distribution to the city or, for the present occasion, to the camp. It may be assumed that the filtered river water is satisfactory but the water from the series of wells, although protected from surface contamination, should, I think, be filtered also. The wells which existed in some parts of the camping ground were also utilised, especially by the natives, but the water in these is apt at times to become brackish. Another important feature of the sanitary arrangements was the disposal of the night-soil. This was for the most part removed entirely away from each camp by carts to the large trenching grounds outside. The contents of the carts were deposited in large trenches a foot in depth and the night soil was afterwards thoroughly covered in. The layer of night-soil was not permitted to be made thick and examination of the dug-up soil within a few days showed it to have become entirely deodorised. In only a few camps was the night-soil intrenched within the boundaries of the camps. The rapid removal of all excreta and the cleanliness and disinfection of the utensils employed form the secrets of the satisfactory state of the camp. Latrines and urinals for public and native use were freely scattered all over the great camp. Off the watered roads the ground was very dusty, especially when subjected to animal traffic, and I noticed that the coolies—men, women, and boys—who had been long employed in shifting this dusty earth for the various works all suffered more or less from ophthalmia. The urinals having sawdust or dry earth for absorbent materials were reported as most successful so long as the material was regularly stirred up. The latrines were in many places furnished with double "basins," so that the fæces were kept separate from the urine and the arrangement seemed to answer well and to postpone the usual fermentation processes. The two forms of excreta were kept separate until transferred to the cart for removal to the trenching grounds.

Jan. 7th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Infant Life Protection.

AT the meeting of the Manchester guardians on Jan. 21st the first annual report of Mrs. Bostock, the inspector under the Infant Life Protection Act, was read. It bears out the opinion expressed by Miss Zanetti, as mentioned in a paragraph on baby-farming in the Chorlton Union which appeared in THE LANCET of Jan. 24th, p. 272. Mrs. Bostock reported that while some of the cases she visited were very satisfactory most of them were unsatisfactory, though some had improved. Most of the foster-mothers were glad of advice A leaflet on infant-feeding was distributed and she found that most of the children improved wonderfully. "It would be well," she thought, "if the law were amended so as to cover the case of every single child out at nurse for hire, although she visited every case, whether within the Act or not." The chairman said that that was the object of the amendment of the Act which they had asked their Members to support.

Vaccination in Workshops.

At the meeting of the Manchester guardians on Jan. 21st it was stated that a communication had been received from the medical officer of health on the subject of the desirability of vaccination at workshops, which had been before the board at a former meeting. The board, in contrast to its usual energy as to sanitary matters, seems to be inclined to adopt the *laissez faire* method which is scarcely commendable when dealing with small-pox, for the chairman is reported to have said that "he did not know that small-pox was getting worse and they might let the matter stand over." Another guardian said that they paid £260 to their own vaccinators, but he omitted to say what the present epidemic had already cost the ratepayers of Manchester, nor did he put any money value on the misery brought by small-pox in its train. The "let it alone" course suggested by the chairman was to the liking of the vice-chairman and the rest of the guardians, for they agreed that the matter might well be allowed to stand over "and the board shortly after adjourned." It would be interesting to know if the guardians have been revaccinated, or if they considered it a matter that might "well be allowed to stand over." In the meantime four fresh cases were taken to the hospital at Clayton on Sunday and two more on Jan. 26th. Two fresh cases were also reported on the 26th at Oldham, one at Royton, and two at Wigan. There is no information as to how much worse the situation will have to be before the guardians come to the conclusion to adopt the suggestions of the medical officer of health.

Gift to the Royal Infirmary.

It was announced at the meeting of the board of the Royal Infirmary yesterday that Mr. R. E. Hodgson had endowed with £500 of corporation stock a fund in memory of his father, to be known as the Henry Hodgson (Samaritan) Fund. After his death the original Samaritan fund, which was dependent on subscriptions, was called the Hodgson (Samaritan) Fund, and it will now have an income of £15. The object is to assist patients to get artificial limbs and surgical appliances and to relieve necessitous patients on their discharge. The late Mr. Hodgson gave up much of his time to the patients in the wards, making personal inquiries, followed in suitable cases by substantial help.

Anthrax near Whitchurch.

A serious outbreak of anthrax has just occurred near Whitchurch. A bullock died, it was supposed "from inflammation." The carcass was boiled and given to a large number of pigs, &c. Shortly after seven pigs died, also two cats, a dog, and a ferret. The Board of Agriculture sent down an official who said the disease was anthrax and the bodies of all the animals were cremated on Jan. 26th. It is feared that there will be further deaths.

Jan. 27th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The New Out-patients' Department at the Liverpool Infirmary for Children.

THE new out-patients' department of the Infirmary for Children was opened on Jan. 22nd by the Countess of Derby in the presence of a large gathering. In the year 1900 a suitable site opposite the infirmary and entirely separated from it by the width of a side street was by good fortune secured. A new and completely detached building for the sole purpose of the out-patients' clinic has been erected preparatory to the total demolition and rebuilding of the whole infirmary which had been declared insanitary. The new "extern" stands alone, surrounded by streets on three sides and a public passage on the fourth side. It has, therefore, been possible to obtain light and ventilation on all sides. The patients' entrance is at the south-west angle of the building, approached from the principal thoroughfare called Mulberry-street and exactly opposite the main building. It opens into a space for the accommodation of perambulators and through this communicates directly with a large waiting-hall. The latter is placed in the centre of the building and around it are grouped the various consulting, examining, and operating rooms. Near the entrance is a registration room, adjoining which an isolation room is provided from which infectious cases can be removed without their re entering the building. The dispensary is suitably placed opposite the principal entrance, to the right of which are also conveniences for women and children. At the north end of the building, next Mulberry-street, is the entrance for the staff, near which the various rooms for the medical staff and the nurses are situated, with lavatories and other conveniences. An ophthalmic room is provided; also a store for splints and other appliances. At this end of the building are placed the heating cellar in the basement and on the first floor provision is made for the keeper, with a small yard. The building generally is one storey high; the waiting-hall, being higher than the adjoining rooms and above the keeper's yard (which is on the first floor) can therefore be lighted and ventilated on four sides, which is an obvious advantage in getting a thorough draught of air. The rooms are heated by means of hot water, the fresh air passing through the radiators. Provision is also made for admitting fresh air by means of "Leather's" ventilators. All windows have opening casements. The various rooms have extract ventilators connected with the trunk in the roof, which is turned into an automatic ventilator fixed in the centre of the ridge to the main roof. The interior walls are lined with glazed bricks up to the dado, having round

internal and external angles both horizontally and vertically. All the joints are finished with Parian cement. The wall-surfaces above the glazed bricks are rendered in Portland cement, finished with a smooth surface of Parian cement which has been painted in white ripolin. The floors are paved with terrazzo generally, but some with wood block and "litosilo." The front entrance has an inclined plane without steps. All lavatories, sinks, &c., are bracketed from walls and are without floor supports, and the electric light has been installed throughout. The building has been built of Accrington red bricks with stone dressings, the roofs being slated. Speeches were delivered by Sir William Banks and by the Bishop of the diocese, Mr. C. J. Crosfield (the president of the infirmary), and others. A strong appeal was earnestly made for funds to the amount of £50,000 to enable the present infirmary to be demolished and rebuilt. At the close of the ceremony the treasurer received a promise from Mr. T. Sutton Timmis of £2000 and from Mr. James Lister of £500.

Complimentary Banquet to Major R. Ross, C.B., F.R.S., late I.M.S.; Appointment for Dr. A. S. F. Grünbaum at the Royal Infirmary.

A complimentary dinner was given to Major R. Ross, the Alfred Jones professor of tropical medicine in University College, Liverpool, by the University College Association, under the presidency of Sir Alfred Jones, K.C.M.G. Among those present were Sir William S. Church, Bart., K.C.B. (the President of the Royal College of Physicians of London), Dr. Patrick Manson, C.M.G. (London School of Tropical Medicine), and Sir William Banks. There were over 100 gentlemen present. Sir William Church, in responding to the toast of "Our Guests," alluded to the great national value of the Liverpool School of Tropical Medicine, which was so closely connected with University College. He also alluded to the magnificent donation given by Mr. T. Sutton Timmis to be devoted to cancer research (to which allusion was made in THE LANCET of Jan. 24th, p. 268) at the Liverpool Royal Infirmary. He congratulated them on the appointment of Dr. A. S. F. Grünbaum as the director of that research. They could not have a better director. Sir William Church's testimony to the ability of Dr. Grünbaum as a distinguished student of research is thoroughly indorsed by his professional brethren in Liverpool.

Liverpool Stanley Hospital: the Term of Office of Honorary Medical Officers.

In view of the near approach of the annual meeting of the subscribers to the Stanley Hospital attention may be drawn to the period of office of the honorary medical officers which prevails at this charity. A term of 20 years' service for honorary medical officers may be considered by some to be a reasonable one; but a charity, in losing the experienced services of an honorary physician or surgeon, say, at 50 years of age, may in many instances suffer loss. On the other hand, it is in the discretion of the subscribers in the present state of the law, to elect an honorary medical officer 45 or 50 years of age, who can retain office for 20 years. The latter example furnishes a strong argument in favour of altering the law so as to bring the charity into line with other large local general hospitals. At the Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, the Eye and Ear Infirmary, and the Infirmary for Children, the period of service for the honorary staff is fixed to terminate at 60 years of age. A general feeling exists that a similar law should be in force at the Stanley Hospital.

Liverpool Royal Infirmary.

Mr. T. C. Litler Jones has been elected as honorary assistant surgeon to the Liverpool Royal Infirmary in the room of Mr. G. G. Hamilton who has been promoted. Mr. Jones is an old student of St. Bartholomew's Hospital and was in charge of the Welsh Hospital at Pretoria during a portion of the recent war in South Africa.

Jan. 27th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Poorhouse Hospitals and the Local Government Board.

AT a meeting of the Edinburgh parish council held on Jan. 19th a letter was read from Mr. R. B. Barclay, the general superintendent of the Local Government Board, written to that Board in December, 1902, stating that at recent visits paid by him to Craiglockhart and Craigleith Poorhouses he had found both houses clean, in order, and carefully managed, but that the hospital accommodation of both was taxed to the utmost, although the season of heaviest drain on the hospital resources had not yet been reached. With the exception of the wards for tuberculous patients which were not available for ordinary cases, there was on the occasions of his visits not a single unoccupied bed in the hospital of either poorhouse. That condition had been recurrent in recent winters and nothing had been done to remedy it. The hospital at Craiglockhart could be easily enlarged at a minimum of expense and no time should be lost in providing additional accommodation as the present position was far from satisfactory. The numbers in the hospitals were, in Craigleith 181, and in Craiglockhart 179. He also regretted that so many children were accommodated in the ordinary wards of these two houses. There were 140 children in all, of whom 99 were over five years of age. If the numbers could not be reduced by boarding out, a separate children's home under a trained superintendent should be provided. There had been in Poor-law administration no fact more clearly substantiated than the mistake of retaining children in a poorhouse in association with adult paupers. Mr. Barclay subsequently followed this letter up by a communication sent directly to the parish council on the same matters. In it he observed that the congestion in the two hospitals still continued and was in reality greater than appeared in the returns. The Board viewed the present state of the poorhouses with grave concern and had remitted to him to inquire and to report concerning the whole matter. Before taking any steps he was anxious to know what measures the house committee or the parish council was prepared to take to remedy the present state of matters. As a similar congestion had occurred during the winter months in the past four or five years the committee could not plead that it had been taken by surprise on this occasion. He also understood that the overcrowding was not limited to the hospital, but that the corridors of the Craigleith poorhouse were being used as dormitories for the inmates. Had it ever occurred to the committee to acquire accommodation in country poorhouses to relieve the temporary congestion? After some discussion the council decided to remit the matters referred to in these letters to be considered at a special meeting of the house committee. At the same meeting the parish council resolved to increase its donation to the Queen Victoria Jubilee Institute for Nurses from £50 to £100 in view of the vast amount of work done for paupers by the Queen's nurses. The chairman remarked that he believed that the institute had saved the rates several hundred pounds.—A meeting of the house committee of the parish council was held on Jan. 21st to consider the question referred to above. After considerable discussion it was decided to provide extra hospital accommodation at Craiglockhart. It was agreed to appoint a committee to select a site at Craiglockhart and to report as to what accommodation was absolutely necessary.

The Carnegie Bequest.

An apparently inspired paragraph has appeared in the local press indicating that the Carnegie trustees are working out a scheme for providing funds to the four universities for the purpose of endowing post-graduation research by the more brilliant students in the various faculties. This has appeared as if the trustees were making a new departure, but it merely forms one part of the original scheme. The grants will be paid out of the income of the money still retained in the hands of the trustees.

Edinburgh University Union Extension.

The acting committee which was appointed at the meeting at the M'Ewan Hall on Jan. 13th to carry out the scheme for the extension of the Edinburgh University Union met on the afternoon of the 19th. Various proposals regarding the raising of the necessary sum—viz., £20,000—were considered and several preliminary arrangements were made.

Edinburgh Medical Missionary Society.

The annual meeting of the Edinburgh Medical Missionary Society was held on Jan. 22nd, Dr. James Ritchie, president of the society, being in the chair. The report of the treasurer showed that the ordinary income of the society had been £4537, as against £4867 last year. The total ordinary expenditure was £4991, as against £4731 last year. There had been some falling off in subscriptions during the year.

During the year £182 had been received for the new out-patient pavilion at the Victoria Hospital, Damascus. Of the £500 or £600 required to build this pavilion £414 had now been subscribed. Dr. E. Sargood Fry, the secretary and superintendent, submitted the annual report, which referred especially to the building of the new premises, which was now far advanced. The total sum required for this would probably be not less than £5000. Three former students had received appointments abroad during the past year. On the motion of Sir James Russell, seconded by Sir Archibald Campbell, office-bearers were elected, Dr. Ritchie being reappointed president of the society.

The New Principal of the University of Edinburgh.

The appointment of Sir William Turner, K.C.B., to the Principalship of the University of Edinburgh is a suitable occasion on which to recall the leading incidents in his public career. Sir William Turner was born in Lancaster in 1832. His father was English, but his mother was a Miss Logan, a Berwickshire lady. He received his medical education at St. Bartholomew's Hospital, where he studied under Sir James Paget. He obtained the Membership of the Royal College of Surgeons of England and graduated as M.B. of the London University. In 1854 he came to Edinburgh as senior demonstrator of anatomy under Professor John Goodsir. This post he held until 1867 when, on the death of Professor Goodsir, he was appointed to the chair of Anatomy. During the 36 years of his occupancy of the chair Sir William Turner has held an unrivalled position as a teacher in the Edinburgh School of Medicine. He has also, as is universally acknowledged, added to the lustre of the chair which had been held by Munro and Goodsir. He has done this in virtue of his contributions to comparative anatomy. He has, moreover, during the whole period of his occupancy of the chair taken an active and energetic interest in all university matters, and has shown himself to be possessed of great organising and administrative ability. In 1873 he was elected to represent the University of Edinburgh on the General Medical Council and on the death of Sir Richard Quain he was elected President of that body, an office which he still holds. He took an active part in the scheme for the erection of the new buildings for the accommodation of the medical faculty of the University and also took a large share of the arrangements in connexion with the erection of the M'Ewan Hall. He is the author of several works on anatomy and he edited the second and third editions of Sir James Paget's classical lectures on surgical pathology. He was joint founder of the *Journal of Anatomy and Physiology*, of which he is still an editor. He was knighted in 1886 and in 1901 he was made a K.C.B. He has honorary degrees from the Universities of Glasgow, St. Andrews, Montreal, Oxford, Durham, Toronto, Dublin, and Cambridge. He is a Fellow of the Royal Society of London, a Fellow of the Royal Society of Edinburgh, a Fellow of the Royal College of Surgeons of Edinburgh, and a Fellow of the Royal College of Surgeons of England.

The New Principal and the Students.

When Sir William Turner met the class of anatomy on Jan. 21st his appointment to the principalship had become widely known. His appearance in the lecture-room became, therefore, the signal for a great demonstration of approval and enthusiasm on the part of his students. When quietness had been restored Sir William Turner addressed the students. He thanked them for the overpowering reception which they had accorded to him and dwelt upon the responsibility of the position to which he had been chosen. He referred to the line of distinguished men who had preceded him in the principalship. Speaking of Sir William Muir he said: "I feel, gentlemen, that I cannot assume the duties of the new office which has been conferred upon me without referring to that courteous gentleman, that kind-hearted man, who has always throughout his 18 years of service here acted towards his colleagues in a noble and impartial way and who as regards the students of the University has shared their feelings and sentiments in a way which has most thoroughly endeared him to them." Sir William Turner then intimated that his having accepted the office of principal implied his relinquishing his position as professor of anatomy. He finished his speech with a warm expression of gratitude to the generations of students who had attended his lectures for the sympathy, kindness, and affection which had subsisted between him and them. Sir William Turner then proceeded with his lecture.

Jan. 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Sir Charles A. Cameron.

IT was publicly announced in the *Irish Times* of Jan. 24th that the gold medal for distinguished services rendered to public health and sanitary science founded by Sir Henry Harben of London had just been awarded to Sir Charles A. Cameron, the chief public health officer of Dublin.

Poisoning by Carbon Monoxide.

IN THE LANCET of Jan. 24th, p. 258, I find written, "Carbon monoxide is rapidly becoming a modern terror." The truth of this statement is further exemplified this week by the fact that two cases of fatal coal-gas poisoning took place in Dublin on Jan. 15th when a lady and gentleman staying at the Clarence Hotel were asphyxiated. When discovered the lady was already dead and her husband was in a dying state. The double inquest concluded on Jan. 23rd after having been previously adjourned in order that Professor E. J. McWeeney might furnish his report. He stated that he had made an analysis of the blood of the deceased lady and that it gave the spectroscopic and other indications of being saturated with carbon monoxide—a component part of water gas and to a much less extent of coal gas. He said that the practice of adding a certain amount of the former to the illuminating gas of towns had recently become frequent with gas companies; that since then cases of death from gas poisoning had become much more numerous; and that he considered it to be a grave source of injury to the public health. In point of fact, so many fatalities have occurred in Dublin and Belfast since the composition of illuminating gas in those cities suffered alteration that the matter was noted in THE LANCET many months ago. Within a comparatively short space of time six deaths have taken place from this cause in Dublin alone. In this particular case it was shown at the inquest that the bedroom occupied by the deceased was insufficiently ventilated and that its occupants came from a remote country town in Ireland, where gas has not been introduced. Professor Antony Roche in a letter to the public papers points out that while ordinary gas contains about 6 per cent. of carbon monoxide, water gas contains no less than 40 per cent. of the noxious constituent in question.

Ulster Branch of the British Medical Association.

The winter meeting of the Ulster Branch of the British Medical Association was held in the Medical Institute, Belfast, on Jan. 22nd, Professor T. Sinclair, the President, being in the chair. After the reading of the minutes the report of the council (showing members who had been elected) was passed. Dr. S. English read notes of a case of Missed Abortion, with specimens. Mr. T. S. Kirk introduced a discussion on Prostatectomy, in which Mr. A. B. Mitchell, Dr. A. Fullerton, Dr. J. S. Darling, Dr. R. J. Johnstone, Dr. P. Redfern, and the President took part. Patients and specimens from cases of prostatectomy were shown by Mr. Kirk, Mr. Mitchell, and the President. The tendency of the discussion was to regard the operation done by the suprapubic method as one with a future before it, but that it was not the prostate but some form of fibro-adenoma in it which was removed. Dr. Redfern mentioned the interesting historical fact that the late Mr. Lizars had 50 years ago done, as he thought, a prostatectomy, but subsequent examination showed he had not removed that organ. Dr. Redfern regarded it as impossible, anatomically, to remove the prostate. Professor J. W. Byers showed Bossi's Instrument for Rapid Dilatation of the Cervix in certain cases, especially eclampsia, in obstetric practice. He also exhibited a specimen of Cystic Degeneration of the Chorion, illustrated by microscopic sections prepared and shown by Dr. Johnstone. Professor Byers said that in some of the older text-books two types of hydatid mole were described: (1) the simple and (2) the malignant. It was, he thought, interesting in this connexion to note that the very malignant disease of the body of the uterus first described in 1889 by Professor Saenger of Leipsic as deciduoma malignum was preceded in one-half the cases by a history of hydatid mole. Dr. J. R. Davison showed a specimen of Hydatid Mole from a patient, aged 22 years, who had not been pregnant before and in whom there were none of the ordinary symptoms of the condition. Dr. W. A. McKeown read a paper on Intra-ocular Irrigation in the Extraction

of Cataract. Dr. E. C. Thompson, M.P., read notes of (1) a case in which he had Removed from the Vagina of a Lunatic 16 Articles, including several stones, the neck of a bottle, and a glass-stopper. The offensive discharge drew attention to her condition and the foreign bodies were removed under an anæsthetic; (2) of a Successful Removal of a Dermoid Ovarian Cyst; and (3) of a case in which in a man an Intussusception Sloughed and came away per anum, the patient subsequently recovering.

The Ulster Fisheries and Biology Association.

A new association has just been established in Ulster for the investigation of the fauna and flora of the seas and fresh-water loughs of Ulster with special reference to the economic aspects of our fisheries. The affairs of the association are to be managed by a council of 12 members elected annually, six to be elected by the members and associates of the association, two by Queen's College, Belfast, two by the Natural History and Philosophical Society, and two by the Belfast Naturalists' Field Club. It is proposed from the first to carry on work both in the sea and in Lough Neagh. The following is a rough estimate of the outlay needed to meet the requirements: £70 for rent or purchase of a cottage for use as a marine laboratory and fitting up of same; £250 for purchase of steam launch, dredges, apparatus, &c.; £200 per annum for salaries of skilled assistant and boatman; £100 per annum for incidental expenses, chemicals, bottles, books, &c. The council will elect an honorary director who will undertake the general supervision of the work of the staff of the association, both paid and voluntary, and will distribute such material as may be collected to members and associates and others for detailed examination and report. A contribution of £10 constitutes a life member; of £1 annually a yearly member; and of 10*s.* annually an associate. It is believed that Professor Gregg Wilson will be the first honorary director.

Medical Witnesses at Inquests.

At the adjourned quarterly meeting of the Londonderry county council the following resolution—inasmuch as it is illegal and not in compliance with the Act of Parliament—was rescinded by 13 votes to 6:—

That coroners in the future, in the first instance, summon as witness the medical gentleman who has been most recently in attendance on deceased person, provided he resides in the district; in case of sudden death where an inquest is considered necessary and in case no doctor has been in attendance then the medical practitioner residing nearest the place at which such death happens.

Forster Green Hospital, Belfast.

At the seventh annual meeting of the friends of this hospital, held on Jan. 26th, it was reported that a total of 195 intern patients had been treated, while in the extern department 619 new patients had presented themselves. The numbers all round show an increase. Financially the loss on the ordinary income during the year was £113 3*s.* 8*d.* The accounts for working expenses show £336 2*s.* 11*d.* on the wrong side. Mr. Forster Green has offered £150 as a donation if within an early date the public will clear off the remainder of the debt. A good suggestion was thrown out by one of the speakers that as in Scotland and England some of the trade-unionists had subsidised beds in the different sanatoriums something might be done in that connexion in Belfast.

Jan. 27th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Notification of Infectious Diseases.

THE law as to the notification of epidemic or infectious disease appeared in the *Journal Officiel* of Feb. 15th, 1902, but it was not to come into operation until a year from that date. The Government, therefore, before drawing up detailed regulations for the working of the law, sought the opinion of the Academy of Medicine. At the meeting of the Academy held on Jan. 13th M. Josias read the report of the committee which had been appointed to draw up the answer of the Academy to the Minister of the Interior. The necessity for fighting against the spread of infectious diseases by means of a systematic process of disinfection is recognised by everyone nowadays. This disinfection must be made obligatory if it is to be carried out in very poor houses, and in addition to disinfection there must be a system of notification. The responsibility for this notification falls on the medical man in attendance who makes the diagnosis, and it is he who should notify the authorities. But in practice many difficulties arise, and not the least is the fact that by notifying a disease the medical man violates to a certain extent his oath of professional secrecy. Disinfection measures annoy some people and are always liable to injure bedding, furniture, and the like. So the public will have to be educated up to perceiving the necessity for such measures, and inasmuch as the present methods of disinfection are not likely to be improved upon those persons who cannot pay for the most efficient and most costly method—namely, disinfection by the vapour of formol—will only give their consent in a more or less grudging manner. M. Josias fully recognised all these difficulties and he gave it as his opinion that as the law had imposed the obligation of secrecy on medical men it could also release them from such obligation and that it must bow to this necessity. There are some infectious maladies—as, for instance, puerperal fever—with which there is no advantage in the neighbours being acquainted. It is almost impossible to deal officially with tuberculosis—the most dangerous of infectious diseases and one which above all others calls for disinfection, not only after death, but also during the course of the disease. A tuberculous patient is ill for months, or even for years, and it is impossible to disinfect his rooms and effects every eight days, nor can he be followed up throughout any changes of residence. No hotel proprietor or house-owner would under such conditions take him as a tenant. M. Josias came to the conclusion that tuberculosis could not be made a compulsorily notifiable disease, because a medical man would very likely hesitate to expose a tuberculous patient to official disinfection and would simply say that the patient was suffering from chronic bronchitis. M. Josias read the following list of diseases which are to be held as compulsorily notifiable and a declaration of which will be followed by compulsory disinfection: typhoid fever, typhus fever, variola and varioloid, scarlet fever, measles, diphtheria, pneumonia and broncho-pneumonia, miliary fever, cholera and choleraic affections, plague, yellow fever, puerperal infections, ophthalmia in the newly-born, and epidemic cerebro-spinal meningitis. The notification of tuberculosis, whooping-cough, influenza, erysipelas, mumps, leprosy, the various forms of tinea, and the purulent conjunctivitis of adults is left optional. The notification must be made in duplicate by the practitioner in attendance to the mayor and to the prefect (in Paris to the Prefect of Police). The notification is to be made on a form torn from a book of such forms supplied with counterfoils and can be sent post free. Medical men would have preferred that the duty of notifying should have been imposed upon the head of the family affected, but the law considered that in case of any infraction of the regulations it would be easier to prosecute the medical man, and so the duty was imposed upon him.

Sanitary Certificates for Dairymen.

The municipal council of Paris has decided that it will issue "sanitary condition" certificates to any dairyman who shall apply for one, providing that he can show that his cowsheds have been passed as being sanitary and the cows as being in good health. The certificate will be valid for a period of four and a half months and will then be renewable if the premises and the cows are still in a healthy state. The certificate may be quoted in advertisements and on the milk cans sent out by the dairyman mentioned therein.

The Federation of Anti-tuberculous Institutions.

The federation of anti-tuberculous institutions, which had been founded for about a year and of the governing body of which the President of the Republic was chairman, was dissolved at a general meeting held at the Hôtel des Sociétés Savantes on Jan. 26th. Some five or six of the institutions out of the 125 which made up the federation have grouped themselves into a new association under the title of "Fédération Anti-tuberculeuse Française," with Professor Brouardel as President. The other institutions will remain independent.

Jan. 27th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Rupture of the Mitral Valve.

Dr. de Quervain and Dr. Bourquin of Chaux-de-Fonds have reported at some length a case of traumatic rupture of

part of the mitral valve in a man, 35 years of age, who died from the effects of endocarditis ensuing within two months after the accident. The patient whilst helping to move a very heavy cask of methylated spirit made a sudden movement with great exertion to avoid being crushed by the weight of the cask. He immediately felt as if he had been stabbed in the region of the heart and had to discontinue work and to go to bed. He coughed a good deal and expectorated viscid mucus and blood, having also a great deal of pain in the abdomen in the region of the liver and spleen. He was cyanosed and had a rapid pulse. A loud systolic murmur was heard over the mitral valve. Fever ensued, the pain in the abdomen increased, and the patient suddenly succumbed to embolism of the brain. The post-mortem examination revealed a ruptured mitral valve with endocardial vegetations containing staphylococci. Dr. de Quervain assumes that these happened to be present in the blood and settled on the ruptured mitral valve (as *punctum minoris resistentiæ*). On the strength of Dr. de Quervain's report the Accident Insurance Company paid the full sum due under the insurance policy. Such cases are apparently very rare.

Albuminuria.

Dr. M. Cloëtta, professor of pharmacology at Zürich University, spoke on Jan. 9th at a meeting of the Medical Society of Zürich on his experimental investigations with regard to albuminuria. In this condition three chemically distinct bodies are concerned—namely, serum albumin, serum globulin, and nucleo-albumin, the last-named substance being defined by Professor Cloëtta as "that body which can be extracted by sulphate of magnesia, is soluble in water, and can again be extracted by means of diluted acetic acid." With regard to the different forms of Bright's disease the serum albumin and serum globulin are quantitatively the most important. They are found in increased quantities according to the acuteness of the inflammatory process in the kidneys; serum albumin is never absent and the albumin quotient (Hofmann), or the amount of serum albumin divided by the amount of serum globulin, never exceeds 10. On the other hand, the chronic indurative form of nephritis, whether primary or secondary, show a larger amount of serum albumin, so that the serum globulin may even be missed altogether. In these chronic forms of nephritis nucleo-albumin is found in such small quantities that it cannot be determined. The intermediate form of nephritis (large white kidney) shows nothing characteristic. Csasary has arrived independently and at about the same time at the same conclusions. Professor Cloëtta's experiments on animals (rabbits) poisoned with aloïn went to prove that the secretion of these different albuminous bodies was quite independent of the albumin quotient of the blood. A patient suffering from nephritis complicated by eclampsia who for therapeutic reasons was bled several times gave the same result—a quotient of 7·8 for the urine but only the almost constant quotient of 2·2 for the blood. Professor Cloëtta proved experimentally that Csasary's conclusion that the blood pressure plays an important part is fallacious. The important rôle is certainly played by the tissue of the kidney itself, as can be demonstrated experimentally. The state of the tissue of the kidney is responsible for these variations in the secretion of the different albuminous bodies. The nucleo-albumin is not derived from the blood serum; it originates in the kidney itself owing to disintegration of tissue. Experiments have been made tending to prove that anatomical lesions and functional disorders do not always absolutely correspond, a view which has already been suggested by clinical observers.

Zürich, Jan. 26th.

Obituary.

RICHARD CHANDLER ALEXANDER PRIOR, M.D. OXON., F.R.C.P. LOND., F.L.S.

ON Dec. 5th, 1902, the death took place at York-terrace, Regent's Park, of Dr. Richard Chandler Alexander Prior. He attained the age, within a few months, of 94 years and for some time had been the oldest living Fellow of the Royal College of Physicians of London. He was born in Wiltshire in 1809. "My horoscope," he says in his memoranda, "was drawn the same day and is still preserved." Educated at Charterhouse and at Wadham College, Oxford, he began his medical studies in London in 1830 at Mayo's Anatomy School, Great Windmill-street, and attended Faraday's lectures on chemistry. The following year he entered St. George's Hospital, where he completed his studies. He graduated in medicine in 1835 and was elected Fellow of the Royal College of Physicians of London in 1840. He visited Edinburgh and Berlin and settled in practice in Bath and subsequently in Chippenham, but after a year or two of ill-health he was obliged to abandon the practice of medicine and henceforward devoted himself to botany and especially to the collecting of botanical specimens. In pursuit of this study he travelled in Austria, where he lived for three years and made a collection of nearly all the species of Styria and the adjoining provinces. He subsequently travelled in Italy and Sicily, "where I was much struck," he says, "with the circumstance that neither in the Kingdom of Naples nor in Sicily is there anything like the scattered hamlets and cottages that we find everywhere in England and Germany—a result of the comparative insecurity of life and property and a cause of the preference of southern people for town life, and hence the little attention paid to natural history by them, both in ancient and modern times." In 1846 he visited Cape Colony, where he stayed two years and made a very large collection of plants. He journeyed across the Karroo in an ox-wagon, "the effect of which," he quaintly says, "I felt for several years in the singular habit of connecting all noises that I heard in my sleep with the cries of the wild animals of that desert. This seems the more strange as I am not conscious that I ever dreamed of being aboard ship, although the circumstances of a sea voyage are more striking than those attending a land journey." He then visited the United States, Jamaica, Canada, Norway, and other countries.

In 1859 he assumed the name of "Prior" in addition to his former surname of "Alexander," on the death of his maternal uncle, from whom he inherited property in Somersetshire. For the last 40 years of his life he divided his time between London and Somersetshire and was occupied in winter with literary pursuits and in summer with antiquarian researches. In 1860 he published a work on "Ancient Danish Ballads" in three volumes, and in 1863 appeared "Popular Names of British Plants," a second edition of which was brought out in 1871. He also published several works of a lighter nature, amongst which may be mentioned a book on croquet—a game in which he was an adept and an authority.

During the last few years of his life Dr. Prior was so crippled from paralysis agitans, marked especially by rigidity of the body and limbs, that he was unable even to feed himself. This condition, a great infliction for one formerly so active, was borne without a murmur. Helpless in body he retained great vigour of mind and perfect memory of even recent events until a few days before he died. During the last year or two he spoke but seldom. His impassive countenance, however, and mode of speaking, which was obviously attended with effort and preceded by a long latent period and deep-drawn breath, if anything rather enhanced the value of his observations, which were always to the point. He preserved a keen sense of humour and would find amusement, even in his ninety-third year, in constructing excellent verse based on humorous themes suggested to him, examples of which were published in the *St. George's Hospital Gazette*. He retained also his interest in plants and was wheeled almost daily into the Botanical Gardens. Dr. Prior was very abstemious in his mode of living. He did not smoke and was with difficulty persuaded to take any alcoholic stimulants. His long life may in part be attributed to such causes, but more, perhaps, to the longevity inherent in his family. His death was a very quiet one, due, apparently, to the effects of influenza and preceded for a few days by high temperature and deep sleep ending in coma.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. J. Albu of Berlin, who was formerly Professor in the Medical School at Teheran.—Dr. Paul Sperling, author of many papers on Military Education in Prussia and on the Propagation of Infectious Diseases.—Dr. Adolf Kast, Professor of Medicine in Breslau. He studied under Erb, Bäumler, and Cohnheim. After graduating in 1579 he became assistant in the medical clinics of several univerities and was then appointed director of the Hamburg City Hospital, from which he migrated to the chair of Internal Medicine in Breslau. His published works have reference

chiefly to Medical Chemistry and to the Diseases of the Nervous System. He was largely instrumental in introducing sulphonal into medical practice.—Dr. Apelles Dei, Professor of Comparative Anatomy in the Sienna Medical School, was burnt to death in bed, the clothes having caught fire from a charcoal heater which he had taken to bed with him.—Dr. Wilhelm Pfitzner, Extraordinary Professor of Anatomy in the University of Strasburg.—Dr. G. Colasanti, Professor of Pharmacology in the University of Rome.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the examinations held in January the following candidates passed in the subjects indicated:—

Surgery.—W. M. Emmerson (Sections I. and II.), Durham; W. T. Harris (Section II.), St. Thomas's Hospital; A. R. Henchley, Middlesex Hospital and Edinburgh; G. Lucas (Sections I. and II.), St. George's Hospital; A. Mooney (Sections I. and II.) and M. E. S. Scharlieb (Sections I. and II.), Royal Free Hospital; and H. G. Sewell (Sections I. and II.), London Hospital.

Medicine.—E. F. Beaumont (Sections I. and II.), Middlesex Hospital; F. G. H. Cooke (Section I.), University College Hospital; W. E. Denniston (Section I.), St. Thomas's Hospital; L. E. Ellis (Section I.), St. George's Hospital; W. M. Emmerson (Sections I. and II.), Durham; A. E. Henton (Sections I. and II.), St. Mary's Hospital; H. Jacques (Section I.), London Hospital; T. G. Longstaff (Section II.), Oxford and St. Thomas's Hospital; and C. C. Rushton (Section II.), University College Hospital.

Forensic Medicine.—R. Appleton, Leeds; E. F. Beaumont, Middlesex Hospital; F. G. H. Cooke, University College Hospital; W. E. Denniston, St. Thomas's Hospital; H. J. Gater, Guy's Hospital; R. C. Rumbelow, Middlesex Hospital; and J. W Watson, Manchester.

Midwifery.—E. F. Beaumont, Middlesex Hospital; W. M. Emmerson, Durham; H. J. May, London Hospital; A. Rogers, Cardiff and St. Mary's Hospital; J. E. Turle, University College Hospital; and T. R. Waltenberg, Manchester.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: R. Appleton, W. T. Harris, A. R. Henchley, A. Mooney, and M. E. S. Scharlieb.

UNIVERSITY OF CAMBRIDGE.—The following were on Jan. 15th admitted to the degree of Bachelor of Surgery:—

F. Bryan and A. M. Simpson, King's; J. G. Cooper, H. H. Dale, R. B. E. Smith, H. D. Leiward, and L. Noon, Trinity; J. E. Payne, Peterhouse; E. A. A. Beck, Clare; F. H. Parker, Pembroke; W. F. Buckle, C. Roper, and C. R. Worthington, Gonville and Caius; E. B. Leech and H. E. Symes-Thompson, Christ's; W. H. Fisher, Emmanuel; H. Wales, Sidney Sussex; and J. H. F. Wilgress, Selwyn Hostel.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berne:* Dr. P. Dubois, Dr. P. Nichans, Dr. F. Dumont, and Dr. E. Emmert have been appointed to Extraordinary Professorships. Dr. F. de Quervain has been recognised as *privat-docent* of Surgery.—*Erlangen:* Dr. Arnold Spuler, *privat-docent* of Anatomy, has been promoted to an Extraordinary Professorship.—*Freiburg:* Dr. W. Stock has been recognised as *privat-docent* of Ophthalmology.—*Kiel:* Count Ferdinand von Spee, Extraordinary Professor of Anatomy, has been promoted to the chair of that subject in succession to Dr. Flemming who has resigned. Dr. Carl Stargardt has been recognised as *privat-docent* of Ophthalmology.—*Marburg:* Dr. Max Jahrmärker has been recognised as *privat-docent* of Psychiatry.—*Moscow:* Dr. Roth, Extraordinary Professor of Psychiatry, and Dr. Spisharny, Extraordinary Professor of Surgical Pathology, have been promoted to ordinary professorships. Dr. M. Chlénoff has been recognised as *privat-docent* of Dermatology.—*Munich:* Dr. Sittmann, *privat-docent* of Medicine, and Dr. Otto Frank, *privat-docent* of Medical Physics, have been promoted to extraordinary professorships.—Dr. Rudolf Seggel has been recognised as *privat-docent* of Surgery.—*Naples:* Dr. M. Crispino and Dr. G. Lucibelli have been recognised as *privat-docenten* of Internal Pathology and Dr. Francesco Egidi as *privat-docent* of Laryngology.—*Padua:* Dr. Dante Bertelli, Extraordinary Professor of Anatomy, has been promoted to the chair of that subject.—*Pavia:* Dr. J. Antonelli has been recognised as *privat-docent* of Surgery.—*Prague (German University):* A special department for General and Comparative Physiology has been added to the Physiological Institute under the charge of Professor E. Steinach.—*Salamanca:* Dr. Hipolito Rodriguez Pinilla has been appointed to the chair of Pediatry.—*Santiago:* Dr. Eduardo Garcia del Real y Alvarez Mijares has been appointed to the chair of Pediatry.—*Seville:* Dr. Cristino Joaquin Muñoz has been appointed to the chair of Midwifery and Gynæcology.—*Tomsk:* Dr. Tikhoff has been appointed Extraordinary Professor of Clinical Surgery.—*Tübingen:* Dr. Hugo Lüthje of Greifswald has been recognised as *privat-docent* of Medicine.

A CENTENARIAN.—Mrs. Bremridge of Sidmouth celebrated her 102nd birthday on Jan. 21st.

MR. R. HENSLOWE WELLINGTON, M.R.C.S. Eng., L.R.C.P. Lond., deputy coroner for the City of Westminster and the south-west division of London, has just been called to the Bar.

ROYAL INSTITUTION.—On Thursday next, Feb. 5th, at five o'clock, Sir Clements Markham will deliver the first of a course of three lectures at the Royal Institution on Arctic and Antarctic Exploration, and on Saturday, at three o'clock, Mr. A. B. Walkley will begin a course of three lectures on Dramatic Criticism. Mr. G. R. M. Murray being unable, owing to severe illness, to deliver his course of lectures beginning on Thursday, Feb. 26th, Professor L. C. Miall will instead deliver three lectures on Insect Contrivances. The Friday evening discourse on Feb. 6th will be delivered by the Right Hon. Sir Herbert Maxwell on George Romney and his Works, that on Feb. 13th by Professor S. Delépine on Health Dangers in Food, and that on Feb. 20th by Principal E. H. Griffiths on the Measurement of Energy.

RADCLIFFE TRAVELLING FELLOWSHIP, 1903, OF OXFORD UNIVERSITY.—An examination for a Radcliffe travelling fellowship of the annual value of £200 and tenable for three years will be held during the present term, commencing on Tuesday, March 10th. Candidates must have passed all the examinations required by the University for the degree of Bachelor of Arts and for the degree of Bachelor of Medicine. They must also have been placed in the first class in one at least of the public examinations of the University or have obtained some prize or scholarship within the University unattached to any college or hall and open to general competition among the members of the University. The successful candidate must before election declare that he intends to devote himself during the period of his tenure of the fellowship to the study of medical science and to travel abroad with a view to that study. The examination will be in physiology, pathology, and preventive medicine, and a subject will be proposed for an essay. There will also be a practical examination in pathology. Intending candidates should send their names, addresses, and qualifications to "The Radcliffe Examiners, University Museum," on or before Tuesday, Feb. 10th.

MOSQUITOS, MALARIA, AND "THE ODD VOLUMES."—In Victoria, Hong-Kong, is a society called "The Odd Volumes," and at the opening meeting of the present session of this society a lecture was delivered by Dr. J. C. Thomson upon Mosquitoes and Malaria. Dr. Thomson, who amongst other things is lecturer on tropical diseases at the Hong-Kong College of Medicine, commenced his lecture by detailing the various steps by which we have arrived at our present knowledge of the relations between malaria and mosquitos. He then pointed out that in his opinion malaria would entirely disappear if any one of the three following measures could be completely carried out: (1) if the blood of all malarious persons could be disinfected, say, by quinine; (2) if healthy mosquitos could be prevented from biting infected persons or if infected mosquitos could be prevented from biting healthy persons; and (3) if all anopheles mosquitos could be destroyed. No one of these measures, however, is capable of universal application and in any given locality such measures must be applied as seem most suitable for that locality. For instance, in Hong-Kong the first measure is obviously impossible of application, for the population varies every day. As regards the second measure something may be done, but the third measure Dr. Thomson considered is quite practicable. Culex should be exterminated as well as anopheles, for culex transmits filariæ. Again, said Dr. Thomson, yellow fever has now been shown to be transmitted by culex fasciatus, and from March 1st Hong-Kong will be in direct communication with one of the endemic yellow fever centres—namely, Central America. Dr. Thomson then related the measures recently taken in Havana for

stamping out yellow fever. He concluded by giving a practical demonstration of how to destroy mosquito larvæ. After the lecture there was a discussion in which H. E. the Governor, Colonel Brown, and Dr. J. M. Atkinson took part and the meeting terminated with a vote of thanks to Dr. Thomson.

MEDICAL LIBEL CASE.—At the Cardiganshire assizes, held before Mr. Justice Phillimore at Lampeter on Jan. 19th, Mr. G. R. E. Bonsall, medical officer of the Aberystwith Union Workhouse, claimed damages for defamatory libel against Mr. G. Rees, editor of the *Welsh Gazette*. This newspaper on March 27th, 1902, contained a paragraph stating that at the meeting of the Aberystwith board of guardians it was reported that Mr. Bonsall had performed a clever operation on a patient in the workhouse infirmary, a woman, aged 75 years, who had since died. The newspaper added that the medical staff of the Aberystwith Infirmary (where the patient had been previously to her removal to the workhouse) maintained that no operation should have been undertaken. The paragraph also expressed the opinion that the matter demanded the fullest investigation. The plaintiff contended that this implied that he had performed an unjustifiable operation upon the woman and had thereby accelerated her death and claimed damages accordingly. The defendant said that the words complained of did not convey the meanings alleged by the plaintiff but were fair comment made in good faith and without malice upon facts which were matters of public interest. Several medical witnesses stated that the treatment adopted by Mr. Bonsall was the proper and prudent method. The jury eventually gave a verdict for the plaintiff, with £10 damages. Judgment was entered accordingly with costs. The London and Counties Medical Protection Society conducted the case on behalf of Mr. Bonsall.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, W.C.

The Diagnosis and Modern Treatment of Pulmonary Consumption, with Special Reference to the Early Recognition and the Permanent Arrest of the Disease. By Arthur Latham, M.A., M.D. Oxon., M.A. Cantab., Author of the Prize Essay on the Erection of His Majesty's Sanatorium. Prize 5s. net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, 83–89, Great Titchfield-street, Oxford-street, W.

The Surgical Treatment of Ulcer of the Stomach. By C. Mansell Moullin, M.D. Oxon., F.R.C.S., Senior Surgeon and Lecturer on Surgery at the London Hospital. Price 2s. 6d. net.

CHURCHILL, J. & A., 7, Great Marlborough-street, W.

A Manual on Dental Metallurgy. By Ernest A. Smith, Associate of the Royal School of Mines, London; Fellow of the Chemical Society and of the Society of Chemical Industry. Second Edition. Price 6s. 6d.

FISCHER, GUSTAV, Jena.

Allgemeine Semiotik des Erbrechens. Von Dr. med. W. Janowski, Primärarzt am Kindlein Jesu-Hospital zu Warschau. Price M. 2.40.

Die Technik der speziellen Therapie. Ein Handbuch für die Praxis. Von Prof. F. Gumprecht, Med.-Rat. in Weimar, Dozent an der Jenaer Universität. Dritte umgearbeitete Auflage. Price M. 8.; bound M. 9.

Arbeiten aus dem Pathologischen Institute zu Helsingfors (Finnland). Herausgegeben von Prof. Dr. E. A. Homén. Die Wirkung einiger Bakterien und ihrer Toxine auf verschiedene Organe des Körpers. Price M. 30.

FOWLER, L. N., AND CO., 7, Imperial Arcade, Ludgate-circus, E.C.

Hypnotism and the Doctors. II. By Richard Harte. Price 12s. 6d.

HAZELL, WATSON, AND VINEY, Limited, 52, Long-acre, W.C.

Hazell's Annual for 1903: a Cyclopædic Record of Men and Topics of the Day. Revised to Dec. 31st, 1902. Edited by W. Palmer, B.A. Lond. Price 3s. 6d. net.

ILIFFE AND SONS, LIMITED, 3, St. Bride-street, E.C.

Elementary Photo-Micrography. By Walter Bagshaw. Price 1s. net.

MALOINE, A., 23–25, rue de l'Ecole de Médecine, Paris.

Cours de Minéralogie Biologique. Par le Dr. J. Gaube (du Gers). Quatrième série. Price 4 francs.

MURRAY, JOHN, 50A, Albemarle-street, W.

The Truth and Error of Christian Science. By M. Carta Sturge (Moral Science Tripos, Cambridge). With an Introduction by the Rev. H. S. Holland, M.A., Canon of St. Paul's. Price 6s.

Spirals in Nature and Art. A Study of Spiral Formations Based on the Manuscripts of Leonardo da Vinci. By Theodore Andrea Cook, M.A., F.S.A., with a Preface by Professor E. Ray Lankester, F.R.S., &c., Director of the British Museum of Natural History. Price 7s. 6d. net.

ROBINSON, F. E., AND CO., 20, Great Russell-street, Bloomsbury, W.C.

The Order of the Hospital of St. John of Jerusalem. Being a History of the English Hospitallers of St. John, their Rise and Progress. By W. K. R. Bedford, M.A. Oxon., Genealogist of the Order, and Richard Holtzcche, Lt.-Col., Librarian of the Order. Price 7s. 6d. net.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, Strand, W.C.

A Practical Handbook of Midwifery. By Francis W. Nicol Haultain, M.D., F.R.C.P.E., Lecturer on Midwifery, Edinburgh School of Medicine. Second edition, entirely revised. Price 6s. net.

WALKER, JOHN, AND CO., Limited, Farringdon House, Warwick-lane, E.C.

The Golfer's Diary and Match Book for 1903. Compiled by T. B. Earle. Satin cloth, no pencil, 42G, 1s.; paste grain, "back-loop," 62G, 1s. 9d.; American russia, 72G, 2s. 6d.; solid pigskin, 82G, 2s. 3d.; paste grain (tight pockets, no band), refill, 152G, 2s. 3d.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BROWNE, DODWELL, M.B., B.Ch. Irel., has been appointed Acting District Medical Officer at Roebourne and Acting Quarantine Officer for the Port of Cossack, Western Australia, during the absence on leave of Mr. J. Maunsell.

CAMPBELL, ALFRED, M.R.C.S. Eng., has been appointed Visiting Surgeon to the Gaol at Young, New South Wales.

CLEGG, J. GRAY M.D., B.S., F.R.C.S., has been appointed Honorary Surgeon to the Manchester Royal Eye Hospital.

CORLIS, J., M.D., has been appointed Officer of Health for Menzies, Western Australia.

ECCLES, W. MCADAM, M.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to St. Bartholomew's Hospital, London.

EMMANUEL, J. G., M.D., B.S., B.Sc. Lond., M.R.C.P. Lond., has been appointed Second Physician for Out-patients at the Queen's Hospital, Birmingham.

HAY, JOHN, M.D. Vict., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Pathologist to the David Lewis Northern Hospital, Liverpool.

HILL, CHARLES A., M.B. Cantab., D.P.H. Vict., has been appointed Honorary Bacteriologist to the David Lewis Northern Hospital, Liverpool.

LEE, C. HOWARTH, M.B., Ch.B. Vict., has been appointed Resident Medical Officer to St. Mary's Hospital, Manchester.

MISKIN, L. J., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed District Medical Officer at Koolkynie, Western Australia.

MONTGOMERY, HUGH MAYER, M.D., C.M. Edin., has been appointed Honorary Physician to the West Cornwall Infirmary and Dispensary, Penzance.

NOALL, WILLIAM PAYNTER, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Bradford Royal Infirmary.

PEARCE, THOMAS MASSEY, M.B., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Ashburton and Buckfastleigh Cottage Hospital.

PRICE, THOMAS ARTHUR, M.B., Ch.B. Edin., has been appointed Assistant Medical Superintendent at the Hospital for Insane, Toowoomba, Queensland.

SEATON, DOUGLAS, M.B., Ch.B. Vict., has been appointed Honorary Surgeon to the Leeds Public Dispensary.

SUGDEN, D'ARCY, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Ashburton and Buckfastleigh Cottage Hospital.

SYMONS, JOHN, M.R.C.S., L.S.A., J.P., has been appointed Honorary Surgeon to the West Cornwall Infirmary and Dispensary, Penzance.

TEALE, M. A., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Leeds Public Dispensary.

WHITE, GEORGE VINCENT, M.B., Ch.B. Melb., has been appointed Health Officer for the Port of Thursday Island, Medical Officer at Thursday Island, Medical Officer for the care, inspection, and supervision of lepers detained in the Lazaret at Friday Island (Queensland), and Visiting Surgeon to the Prison at Thursday Island, during the absence on leave of Dr. Joseph Leathom Wassell.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM CORPORATION WATERWORKS HOSPITAL, Elan Valley, Radnorshire.—Resident Surgeon. Salary £250 per annum, with board and lodging. Also Resident Medical Officer. Salary £300 per annum, with board, lodging, and drugs.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, and rooms, fire, lights, and attendance.

BOLTON INFIRMARY AND DISPENSARY.—Senior and Junior House Surgeons.—Salary for the senior £130, and for the junior £100 per annum, with apartments, board, and attendance.

BRADFORD POOR-LAW UNION HOSPITAL AND WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £125, with rations, apartments, and washing.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRISTOL ROYAL INFIRMARY.—Resident Obstetric Officer. Salary £75 per annum, with board, lodging, &c. Also Junior House Surgeon and Anæsthetist, and Casualty Officer. Both for six months, with salaries at rate of £50 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Second House Physician for six months. Salary at rate of £50 per annum, with board, washing, and residence.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, lodging, and laundry.

HAMPSTEAD HOSPITAL.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with rooms, coal, and gas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Clinical Pathologist and Bacteriologist. Honorarium 50 guineas.

LANCASHIRE COUNTY ASYLUM, Preston, Whittingham.—Assistant Medical Officer, unmarried. Salary £150, with apartments, board, washing, and attendance.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LIVERPOOL ROYAL SOUTHERN HOSPITAL.—Junior House Surgeon. Salary £85 per annum, with board, residence, &c.

MANCHESTER ANCOATS HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, residence, &c.

METROPOLITAN HOSPITAL.—Casualty Officer, Pathologist, and Registrar. Salary at rate of £150 per annum.

NOBLE'S GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, single. Salary £82 per year, with board and washing.

REDHILL, SURREY, HARLSWOOD ASYLUM.—Two Assistant Medical Officers, unmarried. Salary of the senior £160, rising to £200; of the junior £130, rising to £150, with apartments, board, and washing in each case.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City-road, E.C.—Junior House Surgeon, also Third House Surgeon. Salaries £75 and £50 respectively, with board and residence.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging in the hospital.

ST. PAUL'S HOSPITAL FOR SKIN AND GENITO-URINARY DISEASES, Red Lion-square, W.C.—Honorary Assistant Surgeon.

SHEFFIELD CHILDREN'S HOSPITAL.—House Surgeon. Salary £30 per annum, with board, lodging, and washing.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WHITECHAPEL UNION INFIRMARY, Vallance-road, N.E.—First Assistant Resident Medical Officer. Salary £130 per annum, rising to £150, with rations, apartments, coal, gas, and washing.

YORK, NORTH RIDING ASYLUM, Clifton.—Senior Assistant Medical Officer, unmarried. Salary £200, rising to £400.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeon, under the Factory and Workshop Act, at Dewsbury, in the county of York; at Fivemiletown, in the county of Tyrone; at Carshields, in the county of Northumberland; at Tamworth, in the county of Stamford; at Hawick, in the county of Roxburgh; at Axminster, in the county of Devon; and at Penrith, in the county of Cumberland. There is also a vacancy in the Patterdale District, in the counties of Cumberland and Westmoreland.

Births, Marriages, and Deaths.

BIRTHS.

CURRIE.—On the 3rd of January, at 18, Longmarket-street, Maritzburg, the wife of Oswald James Currie, M.B., M.R.C.S., of a daughter.

ORMEROD.—On Jan. 23th, at 87, Lansdowne-place, Hove, the wife of Ernest William Ormerod, M.D., of a son.

PRICE.—On Jan. 24th, at Uppermill, Saddleworth, Yorks, the wife of David Price, M.R.C.S., L.R.C.P., of a son.

ROBERTS.—On Jan. 20th, at West Malling, Kent, the wife of Arthur H. Roberts, M.R.C.S., L.R.C.P. Lond., of a son.

THOMSON.—On Jan. 25th, at the Avenue, Ealing, W., the wife of George Thomson, M.B. Glasg., of a son.

MARRIAGE.

HEY—SYMES.—On Jan. 21st, at Holy Trinity, Chesterfield, Samuel Hey, M.R.C.S., L.R.C.P. Lond., to Lucie Caroline, eldest daughter of Dr. W. Sandham Symes.

DEATHS.

PRATT.—On Jan. 23rd, at Boscombe, Hants, Maria Louisa, widow of the late William Pratt, F.R.C.S., of Newtown, Mont., aged 64 years.

YOUNG.—On the 25th inst., at his residence, Rochford, Essex, Robert Young, M.B., C.M., aged 50, from capillary bronchitis following influenza. Australian papers, please copy.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE MEDICAL MAN, THE CORONER, AND THE PATHOLOGIST.

IT is necessary to return to the discussion of the situation that has arisen in South London through the attitude that Mr. Troutbeck considers it his public duty to assume. And as Mr. Troutbeck has in addresses to his juries spoken of the necessity of not allowing private prejudice to interfere with the conduct of public duties we take this opportunity of stating that we have no animus whatever against Mr. Troutbeck and that we do not find it amusing week by week to chronicle, generally with adverse comments, the proceedings at inquests held by him. But we must not allow any feelings of distaste to stop us from protesting against Mr. Troutbeck's conduct of inquests when we consider that his innovations of procedure, the legality of which we gravely doubt, do not make for the public good.

On Saturday, Jan. 24th, at Wandsworth Mr. Troutbeck held an inquest upon an infant at which, according to the report given in the *Morning Post* of Jan. 26th, he stated that he had written to the medical man in charge of the case "telling him that he was giving the autopsy to Dr. Freyberger and that if he had any evidence to give he (Dr. Badcock) might be called as a witness." Mr. Badcock refused to attend in the circumstances and his letter seems to have much galled Mr. Troutbeck who said—we quote from the same newspaper report—that "it was not the first time a doctor had been impertinent and he did not suppose it would be the last." The jury then censured Mr. Badcock in his absence. We consider that if Mr. Troutbeck had properly represented the position of affairs to the jury they would never have appended this silly and unjust rider to their verdict. Mr. Troutbeck either wanted or did not want Mr. Badcock's evidence. If he did want it he should have summoned Mr. Badcock in the usual way. As he did not do this it is most regrettable that he should have suffered such a slur to be put upon a professional gentleman.

At an inquest held at Battersea on Tuesday, Jan. 27th, the question was raised by a member of the jury as to the advisability of having the evidence of the medical man who had seen the deceased—an infant stated by Dr. Freyberger to have died from convulsions consequent upon bronchitis and enteritis. Mr. Troutbeck treated the action of the juryman as the outcome of prejudice and is reported to us to have addressed the jury as follows:—

"The point of view, and the only point of view that can be accepted, is that we shall receive here the best evidence that can be obtained. That is the general rule of law and it is obviously the only proper rule. Hitherto, it is well known that juries have not always been able to hear—sometimes they have—the best evidence touching and proving the cause of death. The history of the matter is one that is curious historically. As a matter of fact, the earliest statute on the question of medical evidence goes back to the reign of Edward I. There were then no doctors. It was laid down when this Act came into force that the juries had to do the medical examination themselves. Obviously in that state of medical knowledge they knew as well as anybody else. Probably a good many of them in those troublous times had seen wounds and had a certain practical knowledge. After a time medical knowledge advanced. The great advance was certainly during the past century. Anybody who looks at the history of medical knowledge and sees what it was at the beginning of the last century cannot fail to be struck. The subject on which most knowledge has been gained is that of morbid pathology. I am not speaking my own opinion, it is the opinion of every qualified pathologist in this country—and one has had the opportunity of discussing this subject with the leaders of the medical profession outside the profession of law altogether. There is no doubt that the opinion which the London County Council formed some years ago after careful and unprejudiced inquiry was a perfectly correct one. They said that there was a great deal of public money wasted in post-mortems under the then system because the results obtained were not satisfactory. Now, this is a question where it is impossible to consider one class any different from or with greater favour than another. There must be perfect equality. There was formerly here a habit of calling in without question on every occasion the medical man who happened to be nearest at the time of death, perhaps who had been called in at the last gasp. It is as reasonable to say that that gentleman was the fittest person to make the post-mortem as to say that in the case of a trial the nearest barrister would make the best judge. It is obvious that in this matter, like every other matter, the specialist is the best man. There is no wish whatever to in any way displace the medical practitioner in this or any other district. When he is able to give any information that is of value to the jury in coming to a conclusion on the cause of death I hold that he should be called in to give evidence as to what he saw. But to go on and say he must be considered a pathologist of special skill is to do him an injustice. When I talk to men of the greatest skill in the profession—great physicians and surgeons—I suggest

to them that I should call them in. 'Thank you,' they say, 'we would much rather you didn't. It is not our business in life to make post-mortem examinations.' They say it does require special skill. When I was appointed coroner it was a subject to which I had given long attention. I had formed the opinion that this was a matter in which great injustice might be done. Parents might be blamed unjustly in consequence of a child having been thought to be suffocated when it was not, or of having been improperly fed when it was not. These are questions—I leave out the question of the possibility of crime—which demand special skill. One is bound to do justice to the parents. As representing the interests of the public it is my duty to see that parents are not unjustly treated. I think there are some people who do not understand these matters and who think that there is a slight on the doctors. I cannot call a doctor in for that reason. I must only call him in because I believe he can assist in coming to a solution of great and complicated difficulties. Some people seem to have been under the impression that some slight is shown them, some depreciation of their services and work. It is not the case. I take a man as I find him, doing the work I know he does. I believe the medical practitioners in this district are, the same as those in any other, doing their duty. However painful or arduous their duty I believe they do it with that care and attention for which they deserve every praise. Those duties lie in the healing of the sick, not in making post-mortem examinations, except on rare occasions.

It must not be thought that I am under any kind of obligation whatever to the County Council either by agreement or anything else. The only agreement I have with the County Council is that I happen to be of the same opinion as they when I think a specialist is wanted. I absolutely decline, and shall always decline, to submit to any dictation from anybody as to how I am going to conduct my official duties. The pressure I decline from the County Council I equally decline to receive from the medical profession. The only point of view is the interest of the public. That is the point of view I am bound to consider—the good of the inhabitants within this county. I am bound to consider it, exactly as you are, without fear, favour, prejudice, or ill-will, or affection or favour to anyone. I am certainly not going to do anyone an injury if I can help it. I am going to try to see that the best evidence is put before juries to enable them to determine these complicated questions with the best evidence that can be obtained. In this case the cause of death is a natural one."

Upon Mr. Troutbeck's speech the following reflections at once occur. Everyone is in accord with him in wishing to get the best evidence at coroners' inquests. We think that in certain cases—possibly in the cases of the two infants that have been mentioned above, in one of which death followed improper feeding and in the other bronchitis and enteritis—the absolutely necessary evidence is the evidence of the medical man who attended the child while alive and who can speak to the circumstances of the sickness and death. This evidence he can only give himself; filtered through the coroner's office it becomes valueless or dangerous. To represent that all the persons who hold this view are prejudiced and venal is foolish and unjust. Again, where special evidence is required undoubtedly it should be obtained, and the medical profession of the district where Mr. Troutbeck holds sway are as much of that opinion as we are, and as he is. But they cannot, and we cannot, see where any sort of special knowledge of pathology is required for the conduct of a post-mortem examination on, say, a case of bronchitis and enteritis, while we think that the conditions of Dr. Freyberger's appointment ought to be explained. Thirdly, the effect of Mr. Troutbeck's declaration of independence is damaged by the fact that on the day that he was appointed coroner for the south-western district he agreed to give effect to the London County Council's resolution—a perfectly sensible resolution which, however, requires tact and knowledge in working—that "post-mortem examinations in inquests of a special nature should be entrusted to a specially skilled pathologist" (see the statement of the chairman of the Public Control Committee of the London County Council, published in THE LANCET, Dec. 20th, 1902, p. 1717). No doubt it is a coincidence that the London County Council and Mr. Troutbeck think alike in this matter; but would Mr. Troutbeck have obtained the appointment if he had thought differently? Lastly, with regard to the words of praise that Mr. Troutbeck has bestowed on the medical practitioners in the south-western district of London, gratitude for them will be rudely dashed by his other words attributing impertinence in their dealings to the medical profession.

IS DAMP PREJUDICIAL TO HEALTH?

To the Editors of THE LANCET.

SIRS,—It is a well-recognised fact that negroes and monkeys when they go to cold and damp climates frequently fall victims to phthisis and the common complaints in these climates are bronchitis, pneumonia, liver and kidney troubles, and rheumatism. A large number of persons suppose that if the body is well protected with clothing they, are not likely to suffer from any lung ailments, but they forget that cold may be taken in two ways—one by the chilling down of the skin surface and another by the air directly cooling down the bronchial tubes.

In hot damp climates is found a large amount of dysentery, liver disease, and nerve prostration, and the European race, unless replenished by fresh stock, gradually dies out. In cold and hot *dry* climates, on the other hand, they are not only able to exist but they thrive. At the present time, however, when the open-air treatment is so much in vogue, all previous knowledge seems to be considered as worthless and damp air is admitted both day and night as freely as the dry. What I would suggest is that an experiment should be made with cases exposed to all kinds of weather and also where the damp is carefully excluded, all other conditions, of course, being identically the same.

Such is the mania at the present time for fresh air that young babies are exposed at night and sent out during the day no matter what the state of the weather may be, but this attempt at hardening is not so successful, according to Dr. Hecker of Carlsbad, as many suppose. In a paper recently read before a local medical society he stated that great liability to cold was shown by 31 per cent. of the unhardened, 38 per cent. of the slightly hardened, and 62 per cent. of the severely hardened; and thus it would appear that the hardening process can scarcely be recommended by medical men with advantage. I cannot help remarking that in this as in other matters "the greatest friend of truth is time."

I am, Sirs, yours faithfully,

Bexhill-on-Sea, Jan. 28th, 1902. F. P. ATKINSON, M.D. Aberd.

A QUACK REMEDY FOR RHEUMATISM.

To the Editors of THE LANCET.

SIRS,—A few weeks ago a patient of mine, who has, according to his statement, suffered from rheumatism for years, brought to my notice some tablets for what he described as the "John Smith" cure of rheumatism. He says he tried them and has been cured of his complaint. Further, he says, he has cured several of his friends and fellow-sufferers of the same disease by their use. I asked him for one or two of the tablets which I inclose.

Of course, I do not believe in "the cure," but would be much obliged if you would kindly let me know in this week's issue of THE LANCET what you think of the preparation for rheumatism that I may have your authority for thinking there is nothing in it and for letting my patient know the same.

I am, Sirs, yours faithfully,

Jan. 20th, 1903. RHEUMATICS.

*** Our correspondent has not sent us sufficient material for exhaustive analysis. But it happens that a cursory examination of the two tablets submitted to us shows why definite therapeutical effects might follow upon taking a sufficiently large dose of them. The tablets contain iodide of potassium, guaiacum, and some laxative, probably liquorice and cinnamon. A compound known in the United States as Zollickofer's Mixture and popularly used in chronic rheumatism is:—

Pulv. resin guaici	) aa gr. x.
Pot. iod.	)
Tinct. colchici	f ʒ ss.
Aq. cinnamomi	f ʒ ss.
Syrupi q.s. ad	℥ j.

The tablets are probably made up in something the same proportions of their essential contents.—ED. L.

ELECTRICAL WORK IN GENERAL PRACTICE.

To the Editors of THE LANCET.

SIRS,—Will someone of your readers kindly tell me what appliances to get for electrical work in general practice?

I am, Sirs, yours faithfully,

ANODE.

THE MAN-TRAP.

PEDESTRIANS in rural districts are familiar with the announcement "Trespassers will be prosecuted." Many years ago this threat used to be emphasised by the warning "Beware of Man-traps and Spring Guns," but these deterrents for poachers and other unauthorised visitors to coverts and plantations are now illegal and the man-trap survives only as a curiosity in museums. A specimen in very fair preservation was offered for sale at Stevens's auction-rooms in King-street, Covent-garden, London, W.C., on Jan. 23rd. It was simply a greatly enlarged form of the common iron rat-trap in which the prey upon stepping on a moveable iron plate is caught between two iron jaws brought together by a spring acting on one end of each. The man-trap had two such springs, one at each end, so that the jaws came together with great force. The total length of the trap was 4 feet 8 inches and it weighed probably a little less than 40 pounds. The jaws were each of them 17 inches long and 10 inches high, so that the leg would be caught about nine inches above the sole of the boot. Each jaw carried three pointed iron spikes projecting for one and a quarter inches, and alternating with their opposite neighbours when the trap was closed. The moveable foot-plate measured about 14 by 17 inches. The terrible injuries which such an apparatus might cause are obvious and sufficient to account for the illegality of their employment.

SNAKE-STONES.

A CURIOUS Boer amulet or fetish is the "snake-stone," which, according to travellers, cures snake-bite with remarkable success. Miss Werner, lecturer on the Taal and Zulu languages at King's College, London, states that she has never seen or heard of "snake-stones" during her African travels, but she is inclined to believe in them on the strength of Mr. Selous's very circumstantial account of one which he had an opportunity of examining. The snake-stone is

usually small and is said by Mr. Selous to resemble pumice or bone. Its particular virtue is to suck poison out of the wound caused by the fangs of a snake. Laid upon the bite, it adheres to it after the manner of a sucker, drinks up blood and venom together, and—at least so the imaginative aver—relaxes its hold and falls off when full. According to a recent writer it has even been observed to swell up and to assume the dull colouring and spots of a snake. This last observation is doubtless of the nature of *ben trovato*; the stone is the fertile source of myth and doppers in remote places may be excused for believing that it is inhabited by "spooks" or spirits. "Snake-stones" are handed down in families after the fashion of amulets, and are traditionally believed to have been brought by old planters from the Dutch East Indies, where they were objects of veneration among the natives. It has been suggested that they are made of burnt hartshorn; they are extremely porous. It is uncertain whether any specimens of the snake-stone exist in European museums. There is none in the Museum of the Royal College of Surgeons of England, which, however, possesses "bezoar-stones" and an "eagle-stone." The snake-stone examined by Mr. Selous belonged to a Boer family and was borrowed in emergencies by people for many miles round. An old English hunter whose daughter had been bitten by a snake sent a man on horseback for the stone, which was not applied to the wound for some hours. The girl was saved, but the snake-bite healed badly, owing, the father thought, to the delay in applying the stone. Soaked in brine, the snake-stone is said to give off the poison which it has absorbed.

THE FIXING OF COVERS TO SPECIMEN JARS.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if any of your readers will tell me the best medium for fixing the sheet-glass covers of museum specimen jars. The specimens are kept in a mixture of glycerine, water, and alcohol.

I am, Sirs, yours faithfully,

Jan. 27th, 1903. D.

THE CLERGYMAN AND THE MEDICAL MAN.

IN THE LANCET of Jan. 13th, 1900, p. 143, we referred under the above heading to a letter published in the *Record* of Jan. 5th of that year, signed Spencer J. Compton, South Creake Vicarage, Fakenham. In this the reverend gentleman referred to a remedy recommended by a clergyman. The remedy was carbolic acid obtained from Messrs. Calvert, Manchester, and according to the clergyman, backed by Mr. Spencer Compton, three doses of three drops each in water taken at intervals of four hours would in most cases make a perfect cure of influenza in a day. A correspondent has just written to us inclosing the cardboard case of a bottle of "No. 1 Medicinal Carbolic Acid," manufactured by Messrs. Calvert, which he had bought at a first-class London druggist's. On opening the packet he was surprised to find the following handbill:—

From the Rev. J. E. Woodrow, The Vicarage, Ormskirk.

A SURE AND CERTAIN

CURE for INFLUENZA.

PURE PHENOL, Calvert's No. 1,

(Prepared for INTERNAL use.)

24 Drops in an 8 oz. Bottle of Water, well mixed.

DOSE.—Two Tablespoonfuls three times in 24 hours. Children half the Dose. One Dose will be enough to Prevent; three doses will be enough to Cure.

☞ *The Dose to Prevent should not be taken till the symptoms of Influenza (cold, chill, pains, &c.) show themselves; then One Dose will stop it in less than half-an-hour.*

Any Chemist will prepare a bottle according to above formula.

CALVERT'S ILLUSTRATED LISTS sent on application to

F. C. CALVERT & Co., P.O. Box 513, Manchester.

This Recipe was given me by a Physician in the West Indies, as a sure remedy in Malarial and other Fevers. I came to the conclusion that Influenza was a kind of low Fever, and tried the remedy with success. I have now used it in scores of cases without a single failure.—J. E. W.

Now although it is quite true that carbolic acid is a valuable remedy in influenza and in other diseases as well it is an absolute untruth to say that nine drops taken in three doses will cure influenza or any other fever. As we said upon the previous occasion upon which we referred to this matter, "the advice is dangerous, not only to the patient himself by leading him to think that he has done everything necessary for his own welfare, but it also leads to his not improbably infecting others." We are surprised that a firm of the standing of Messrs. Calvert should send out such misleading statements with their manufactures, and we think that Mr. Woodrow's bishop might point out to him that he is exceeding his duties in thus prescribing.

THE RISKS OF MEDICAL PRACTICE.

AT the January quarter sessions of the peace for the borough of Margate William Herbert Ray surrendered to his recognisances to answer the charge of having unlawfully assaulted Grace Hennessy. The case had already been tried at the last quarter sessions but the jury could not agree. The prosecutrix repeated the evidence which she gave at the last trial and detailed the manner in which the defendant had assaulted her on July 27th. She also said that afterwards she saw two ladies, at whose suggestion she went to the police and made a statement which was taken down in writing. These ladies were not called as witnesses. The jury found the defendant guilty and the Recorder sentenced him to six months' hard labour. Now, we do not for one moment say that this punishment is any too severe for the offence in question, but we do think that it opens up a dangerous vista if any medical practitioner can be convicted of outrageous conduct on the unsupported word of a patient. It is at best only the word of one person against another. Possibly there may have been some evidence brought on behalf of the plaintiff which has not been noted in the report before us; but if not, it will come to this that no medical man will be able to see any patient except in the presence of a third person.

MEDICAL PRACTICE IN CALIFORNIA.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 20th, 1902, p. 1738, "J. D." asks for information concerning medical practice in California. All British diplomas are recognised here, but since August 1st, 1901, a State examination must be passed by *all* desiring to enter practice in California. Full information may be obtained from Dr. C. C. Wadsworth, secretary of the Board of Medical Examiners, 1104, Van Ness Avenue, San Francisco, Cal.

I am, Sirs, yours faithfully,

Sierra Madre, Cal., Jan. 5th, 1903. ARTHUR E. GRESHAM, M.D.

A MEDICAL EPITAPH.

JAMES CURRIE, M.D., F.R.S., died at Sidmouth, Devonshire, in the year 1805 and was buried there. The epitaph to his memory to be found in the church prophesied that:

> "Freedom and Peace shall tell to many an age
> Thy warning counsels, thy prophetic page;
> And, taught by thee, shall on the burning frame
> The healing freshness pour, and bless thy name:
> Whilst Genius proudly, as to Fame she turns,
> Shall twine thy laurels with the wreath of Burns."

Dr. Currie advocated the treatment of fevers by affusions of cold water and he edited a collection of the works of Burns. He wrote also a treatise on the French revolution, but his poet apparently did not think it worth while to mention the fact.

Viator.—The circumstances of practice in the unnamed town in the Transvaal are necessarily so different from those prevalent in places of a more elaborate civilisation that our reply can only be taken as general. There would seem to be nothing unprofessional in making use of the consulting-room upon the druggist's premises, as the practice is indorsed by medical men very generally in Durban and Johannesburg. With regard to the inclusion of B in the arrangement the matter would seem to be one for A and C to decide for themselves.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.) London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.).

WEDNESDAY (4th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M).

THURSDAY (5th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London

Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (7th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (2nd).—OTOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—4.30 P.M. Discussion on Tuberculosis of the Ear, the Nose, and the Naso-pharynx. The following Communications have been promised:—Dr. W. Wingrave: The Microscopical Examination of the Discharge in 100 Cases of Middle Ear Suppuration, with an Analysis of the Results, having special Reference to the Presence of Tubercle and "Acid-fast Bacilli."—Dr. J. Horne: The Clinical Diagnosis and Surgical Treatment of Tuberculosis of the Temporal Bone, considered with Reference to the Pathology and Morbid Anatomy of the Disease.—Dr. W. Milligan: The Diagnosis and Treatment of Tuberculous Disease of the Middle Ear and its Accessory Cavities.

TUESDAY (3rd).—PATHOLOGICAL SOCIETY OF LONDON (Jenner Institute, Chelsea-gardens, S.W.).—8 P.M. Laboratory Meeting.

WEDNESDAY (4th).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Annual Meeting. Specimens will be shown by Dr. Tate, Dr. Sikes, Dr. Eden, Dr. Groves, Dr. Inglis Parsons, Dr. H. R. Spencer, Dr. Blacker, Dr. Russell Andrews, and Mr. Handley. The President (Dr. P. Horrocks): Annual Address.

THURSDAY (5th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Papers:—Mr. N. Smith: Congenital Displacement of the Hips, including a Description of Lorenz's Method of Bloodless Reduction.—Mr. S. Spokes: Immediate Regulation of Teeth.

NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital, N.).—4 P.M. Clinical Cases.

RÖNTGEN SOCIETY (20, Hanover-square, W.).—8.30 P.M. Discussion on Some Points suggested by the Presidential Address of November, 1902 (opened by Mr. J. H. Gardiner).

FRIDAY (6th).—WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Paper:—Mr. C. J. Heath: Operative and other Treatment of Chronic Suppuration in the Middle Ear.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Ordinary Meeting. Cases, Specimens, and Instruments will be shown by Mr. C. Symonds, Dr. Pegler, Mr. Lake, Mr. de Santi, Dr. B. Kelly, Mr. Stewart, Dr. Donelan, and others.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (Society's Rooms, West London Hospital).—8.30 P.M. The Annual Discussion. Discussion on the Sequelæ of Typhoid Fever and their Treatment (opened by Dr. S. Taylor and continued by Dr. W. Hunter, Dr. A. Billiot, and others).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (2nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. Little: Clinique. (Skin.) 5.15 P.M. Dr. K. Grube: Hydro-therapeutics and Balneo-therapeutics.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Complications of Middle Ear Suppuration (with lantern slides).

TUESDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. Taylor: Clinique. (Medical.) 5.15 P.M. Dr. H. Jackson: Aural Vertigo.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Complications of Middle Ear Suppuration (with lantern slides).

UNIVERSITY OF LONDON (Physiological Laboratory).—5 P.M. Dr. W. D. Halliburton: On the Chemistry of Muscle and Nerve. (Lecture on Advanced Physiology.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. J. Collier: Bulbar Paralysis.

WEDNESDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. A. H. Tubby: Clinique. (Surgical.) 5.15 P.M. Dr. J. Galloway: Erythematous Eruptions, their Relationship to General Diseases.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. McAdam Eccles: Surgical Anatomy.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. A. Latham: Hæmoptysis.

THURSDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Cantlie: Clinique. (Surgical.) 5.15 P.M. Dr. J. Taylor: Some Forms of Nervous Disease occurring in Families.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Treatment of Some Injuries and Emergencies.

UNIVERSITY OF LONDON (Physiological Laboratory).—5 P.M. Dr. T. G. Brodie: On the Circulation. (Lecture on Advanced Physiology.)

CHARING CROSS HOSPITAL.—4 P.M. Dr. Willcocks: Demonstration of Medical Cases. (Post-Graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Kellock: Abscesses in Connexion with Spinal Caries and their Treatment.

FRIDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. R. W. de Santi: Clinique. (Ear.) 5.15 P.M. Dr. H. W. G. MacLeod: House Ventilation and Drainage.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. Jones: States of Mental Exaltation—Mania, Paranoia.

UNIVERSITY OF LONDON (Physiological Laboratory).—5 P.M. Dr. A. D. Waller: On the Action of Anæsthetics and Narcotics. (Lecture on Advanced Physiology).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Mr. M. Gunn: Ocular Paralysis.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1902, which was completed with the issue of Dec. 27th, and the Title-page to the Volume, were given in THE LANCET of Jan. 3rd.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 29th, 1903.

Date	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 23	30·02	S.W.	0·09	52	47	37	37	38	Overcast
" 24	30·00	S.W.	...	53	49	38	45	47	Cloudy
" 25	30·09	S.W.	0·06	54	52	47	49	51	Cloudy
" 26	30·18	S.W.	0·01	58	52	50	50	52	Cloudy
" 27	30·09	S.W.	...	67	54	50	50	52	Cloudy
" 28	30·10	S.W.	0·45	72	50	40	41	42	Fine
" 29	30·37	S.W.	0·01	70	50	41	41	42	Hazy

During the week marked copies of the following newspapers have been received: *Derbyshire Times, Margate and Ramsgate Gazette, Free Press (Ireland), Echo (Watford), Yorkshire Post, Hertfordshire Mercury, Exeter Express, Burnley Express, Dublin Evening Telegraph, Echo, Bradford Observer, Daily Express, Globe, Lambeth Mercury, Lincoln Herald, Windsor and Eton Express, Derbyshire Courier, Manchester Weekly Chronicle, Derbyshire Times, Reading Mercury, Herts Advertiser, Times of India, Aberdeen Weekly Free Press, Lancashire Post, Oldham Daily Standard, Daily Mail, South Wales Echo, Westminster Gazette, Public Health Engineer, &c.*

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